

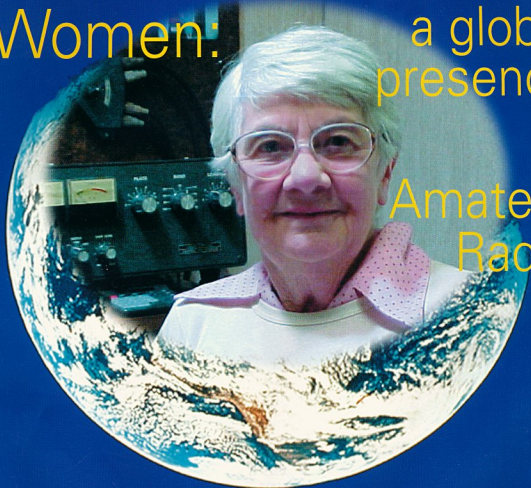
July 2001

Volume 69 No 7



Amateur Radio

Women: a global presence in Amateur Radio



- ★ An Electronic Keyer Paddle from "Scrap-Box" Parts
- ★ A PSK31 Tuning Aid
- ★ Multi-Octave Bidirectional Wire Antennas
- ★ UA3IAR Switchable Quad for 20 metres

Technical Abstracts: • The Fox Finder • Remote ATU • SWR Bridge Sensor



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Amateur Radio

The Institute of the Wireless
Institute of Australia

ISSN 0002-6859

Volume 69
Number 7
July 2001

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Newsletters Unlimited 03 9756 7797

Printer

Streamline Press, Melbourne (03) 9417 2766

Postal Service

IMS (03) 9291 5888

Production Deadlines

Advertising booking and articles for
publication 10th of preceding month.

Hamads and advertising material deadline
18th day of preceding month

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Our cover this month

Brenda Edmonds VK3KT, the first YL to be a Director of WIA. See 'Women: a global presence in Amateur Radio' for her other achievements and those of two other well-known women, Elizabeth VE7YL and Ruth IT9ESZ

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at \$4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
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Registered Federal Office of the WIA

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Editorial Comment

Colwyn Low VK5UE

The Great Computer Crash

Well I am in the throws of trying to source all the material I lost when my HDD died before I had it backed up. This was very much a case of "Why did I not do as I say?" Luckily material for this issue had gone to the printers or not yet arrived. Anything I had before 8th June has gone. I will contact you for copies, if there are none in the Publication Committee files, and I do not have hard copy.

I now have a new computer with CD burner and lot more RAM and HDD. It has a 700MHz clock and I'm still surprised how fast it runs. I'm told this lasts about a week, then it seems slow again.

Overseas Material

We have two articles from overseas journal in this issue and Technical Abstracts is sourced from overseas material. Federal Council asked that we publish significant material from these sources and I am now seeing several magazines for the first time but I do not always recognise what is really of general or specific interest to the majority of members. So I need you to let me know when and where you come across an overseas article which might warrant publishing in AR for Australian Amateurs.

Production of AR

Bill Roper VK3BR has volunteered his assistance in the production of AR and has joined the Publications Committee. His experience in the WIA and the production of AR should help

us lift the presentation of the magazine.

The publication date has been slowly brought forward. The main thing that makes this possible is having enough articles to be able to plan the current magazine and one or two to follow. Thank you to all those who submitted articles this year. I hope the flow will continue.

Federal WIA Communication

If you have access to QNews and/or listen to Divisional Broadcasts you should have noticed a better flow of information/news from the Federal WIA. This is where Amateur concerns are raised with our Government and the International Coordinators of RF Spectrum use. This interaction is on behalf of all Amateurs and is the reason why the WIA needs to have more of the Australian Amateur population as members. So in your conversations with non-members let them know what your WIA is doing for them. We are all part of the WIA no matter what its structure!

The Editor's Activity

I have not been very active for the last few months but I have obtained an all mode 2m transceiver for my 1296MHz transverter so I should be able to do a few more interesting things with it. I also have decided to get out with WICEN in the Forest Rally in Adelaide on July 7th/8th. Following that I had better get the home station in peak condition for the RD Contest in August. I am always surprised how many leads develop faults on Field Days and Contests, when you know they worked the last time.

ar

New WIA Members

The WIA bids a warm welcome to the following new members who were entered into the WIA Membership Register during the month of MAY 2001

| | | | |
|--------|--------------------|--------|----------------|
| L10178 | MR R W PUGH | VK3NYR | MR M MAGEE |
| VK1CEE | MR J D HENDRICKSON | VK3TYR | MR E TREUER |
| VK2GKA | MR K H AHAMER | VK3UAA | MR N DODGSON |
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| VK3CJS | MR C SHAW | ZL1PWD | MR P W DENT |
| VK3JOM | MR K HARRISON | | |



Ernest Hocking VK1LK

It's two months in the position and there has been a lot happening. I continue to hear from amateurs throughout Australia with great ideas on how to improve the way we run the hobby. Please keep the dialogue going. WIA Federal can only know your thoughts and concerns if you tell us, either directly or through the Divisional councillors.

Following the information release on the ACA proposals for the outsourcing of the amateur and marine operator examination services, Brenda Edmonds VK3KT has worked with divisional nominees to develop a first response to the ACA paper. This draft has been circulated to the Divisions; and the first of the Divisional responses are currently filtering through to WIA Federal. Interest in the subject appears to have reached the national press with Mr Glen Mulcaster of the Melbourne Age making contact with the Federal Office to discover what we are doing. I talked to him about the paper and provided some background on amateur activities. The ACA deadline is fast approaching so if anyone has further comment please direct via your Divisional councillor or directly to me for forwarding to Brenda and her team.

Following the invitation by the New Zealand Association of Radio Transmitters (NZART) to its 75th anniversary I flew to Auckland to represent the WIA. This was a very informative trip that I propose to document separately. As part of the celebrations I presented a small plaque to NZART from the WIA acknowledging their 75 years of operation. I am sure we all wish them well in the future and look forward to being able to celebrate their 100th anniversary. The Kiwi hospitality was excellent and it was clear that the amateur spirit is alive and well across the Tasman. I was also pleased to learn that many amateurs follow activities here in Australia with keen interest. Both WIA's AR and QNEWS are read with interest.

During the last month we have also seen further debate on the future of the WIA and of amateur radio with the publication of Martin Luther's latest

paper on the subject. I am keen to see this debate continue. Many amateurs have excellent suggestions on how we can improve the nature of the hobby. I ask anyone with ideas to make them known. Neither the Federal councillors nor the Federal executive has a monopoly on ideas. I welcome your thoughts on how we can improve membership.

I have already received some feedback on my response to Martin Luther's paper. Over the next few weeks I will be writing to those who have taken the time and effort to respond. Not everyone agreed with what I had written. One of the observations made was that my response did not set out a strategy for the future of amateur radio. I must admit that I did not see that as the aim of that document. Rather I want to generate some debate on what the future of amateur radio might be. We have only once debated whether we effectively formulate policy and then determine a strategy for implementing it. Everyone has a role to play in this process by means of the Divisional structure. So please, contribute to the debate.

The potential of the Internet

The first issue to address is how to attract new amateurs to the hobby. We should take a fresh look at the way we target potential recruits. For example we currently see the Internet as an impediment, but there are already many ways we can use the Internet to attract new members. Apart from the obvious mechanism of promoting amateur activities I am sure there are ways in which we can provide interesting entry to the hobby. Two examples might be:

- Voice recognition linked to digital signal modes. PCs can today effectively convert text to speech and vice-versa. As yet I have not seen anyone make the next step of converting speech directly to a digital signal mode.
- Internet access to the operation of attended amateur transceivers. We have seen the use of remote control via the Internet to enable students to undertake astronomy. There may be some merit in permitting

students and others to access attended amateur equipment via the Internet. While there may be some technical issues to overcome the simplified access might encourage more people to try out and subsequently participate in the hobby.

Recruiting the unencumbered

We must recognise that in today's busy society only those unencumbered by work or family commitments will have the time to participate in the hobby. Yes we have an ageing membership. Perhaps that is the reality of the future. If it is, perhaps we should aim to target our recruitment efforts at that group of society that has the time and resources to allocate to amateur radio. This is what many other leisure hobby groups are doing.

In the last few days I have received a letter from Tony Shaw, the Chairman of the ACA, asking that the WIA be represented in the reconstituted International Radiocommunications Advisory Committee (IRAC). He recognises the contribution that Amateur Radio has made to the radiocommunications planning arena and has therefore invited me as President of the WIA to attend to represent amateur radio operators. The committee will meet on one or two occasions throughout the year. I have accepted the invitation on behalf of all Australian amateurs and will keep you informed of issues as they occur.

Work on AR continues. Colwyn Low, the Editor will be including some material from overseas magazine if it is applicable to Australian amateurs. If you come across an article in an overseas Amateur Radio Society magazine you think could usefully be published in AR please make a copy and send it to Colwyn or me. Bill Roper VK3BR has volunteered to do some redrafting of diagrams to help authors without drafting programs and has joined the Publications Committee. There are still issues to resolve and we will continue to work towards providing the best value for money we can. So 73 s for now and I look forward to hearing from you.

ar

An Electronic Keyer Paddle from "Scrap-Box" Parts

Drew Diamond, VK3XU,
45 Gatters Rd.,
Wonga Park, 3115.

Of all the Morse sending devices available, be it keyboard, hand/straight key, bug, jigger or electronic, the most popular nowadays is probably some kind of electronic keyer, and increasingly of a type which has "iambic" or "squeeze" capability. An electronic keyer with this feature must use a paddle with two separate contacts, one for dots and the other for dashes. "Iambic" comes from poetry, where the verse has a di-dah-di-dah.... rhythm, which is what we get when the paddles are squeezed together.

It's difficult to determine the exact time at which amateurs were introduced to the technique, although James Garrett's article (Ref. 1), where he described his popular "Accu-Keyer" was notable in promoting the iambic method. In addition to generating dots and dashes in the usual way, the proficient operator has only to squeeze the paddles to get characters such as C, R, K, F, full-stop, message begins, message ends and brackets, which significantly reduces the number of movements required. The skilled user is thus able to cruise along at a comfortable speed for long periods without fatigue- CW becomes even more fun. Please do not believe the myth that an electronic keyer will ruin your 'fist'. Existing hand/straight key and/or bug proficiency will not suffer (by going to electronic) if we always try to reply to other stations with the key type that is appropriate, or as band conditions allow.

There are some fine-looking, and no

doubt pleasant to use, keyer paddles available at present. But for the person who likes have a go at making things at minimum cost, it would seem that a device which is essentially just a pair of electrical contacts should be a doddle. There have been details published for numerous devices made from bits and pieces like paper clips, ignition points, computer mouse(s), clothes pegs, mouse traps, rubber bands and nails, hack-saw blades, micro-switches etc. They make interesting novelty items, but generally they do not provide the level of performance required by the more serious operator.

Therefore, the following "scrap-box" model is offered. No finicky springs or pivots or bearings are used. Rather, the moving parts are a pair of ordinary single-sided 1.6 mm epoxy glass-fibre printed circuit board strips, about 10 x 85 mm, which interestingly, has just about the right amount of "springiness"

for the job. The copper side of the strips provide the electrical path to the dot and dash contacts.

The screw adjustable back-stops have two functions; when finger pressure is released, the fibre side of the strip falls back against the stop which effectively damps vibrations, and, the stop imparts a slight tension, thus permitting a degree of control over the pressure required to close the contacts- more tension- more finger pressure required.

Dot and dash contacts are nickel plated (N.P.) or plain brass screws which pass through clearance holes in the strips. A small pad of shim brass (or similar) is soldered to the copper foil to provide a wear-resistant contact surface at the point of closure on each strip (rather than just the copper foil, which would wear through too soon).

Brackets are made from 20 mm lengths of 20 x 20 x 3 mm (or similar) L-section aluminium extrusion. The exploded drawing shows the components required and some salient dimensions. Exact duplication is not necessary- although the pair of P.C. strips should be similarly sized. Back-stop and contact screws should be positioned side-by-side upon the contact bracket, and spaced about 10 mm apart. If you do not have a tap to suit these, drill a plain hole and fit a lock nut each side. Note that each P.C. strip has an off-set clearance hole for its opposite contact screw. The hole must be just large enough to allow the screw to pass through without interference.

Base plate (not shown in the drawing) may be an 80 x 80 mm square of phenolic, ABS, bakelite or similar material, about 6 mm thick. The screws which hold the brackets must be countersunk- and the corresponding holes in the underside of the base countersunk to sufficient depth so that

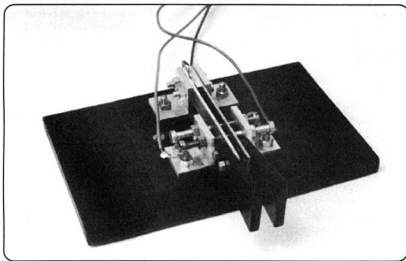
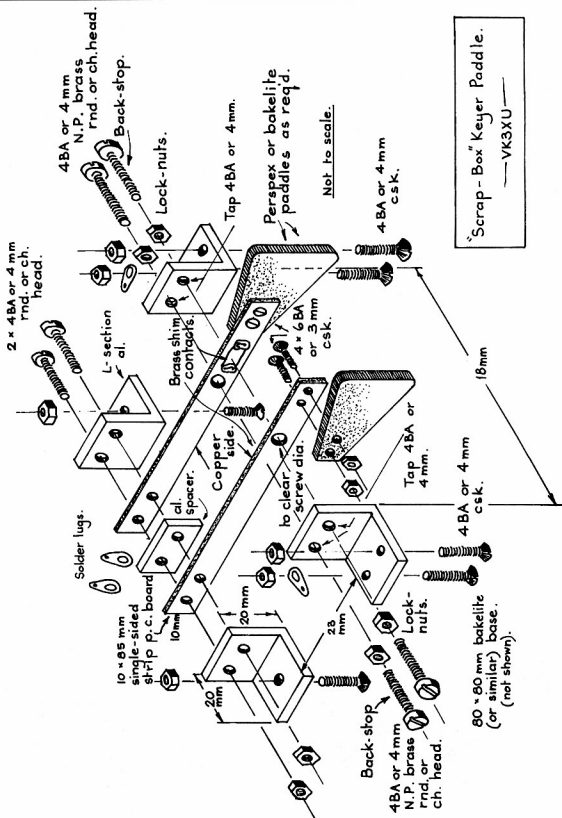


Photo 1



"Scrap-Box" Keyer Paddle.

—VK3XU—

Figure 1

their heads are recessed. The base may be fixed upon an additional steel plate, or attached to some other object, as desired.

Solder tags under fixing nuts for the contact brackets provide the wire connection points for dot and dash. The convention (for right-hand) is that dots are made with thumb, and dashes with index and second fingers. The P.C. strips are separated with a spacer block made from a scrap of 3 mm al. For the common connection (usually chassis ground), two solder tags (the second to provide even spacing) are sandwiched as shown.

The paddle knobs may be made from perspex, ply-wood, bakelite.... and shaped as desired. Those shown are triangular, although oval or rectangular may be preferred.

When the assembly is complete, back the contact screw(s) well away initially,

then bring the backstop(s) up to the fibre side of the strip until it touches, then advance the screw a little further—perhaps half a turn, then nip up the lock nut. Now advance the contact screw to within about 0.3 or 0.5 mm of the shim contact plate, and lock. Test and fine adjust as necessary after connecting the paddle to your electronic keyer.

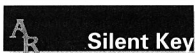
If you are new to electronic keying, try not to go on-air until a reasonable proficiency has been attained, but practice off-air to get a feel for the technique. Don't worry too much at first about the iambic mode, as you should find that it will come naturally after a period of training. Always remember, the mark of a good Morse operator is sending which is not necessarily fast, but is regular, accurately spaced, rhythmic, and has the correct number of dots and dashes for each character. No-one is

impressed with a "stick-along-a-picket-fence" clatter which is riddled with errors. Common sending faults are 5 for H, and 6 for B, with extra dots sprinkled about for good measure. Watch out also for G instead of ME (NAG for NAME heard often). N N for C, NST for TEST, and PD for AND.

References and Further Reading

1. "The WB4VVF Accu-Keyer"; James Garret, WB4VVF, QST, Aug. '73.
2. "Electronic Keyer Paddles"; Dr Gary Bold, ZL4AN, NZART Break-In, Aug. '88.
3. "Which Paddle, Which Keyer?"; Gerald Stancey, G3MCK, Morsum Magnificat #58.

ar



Roy Rayner VK2DO

It is with regret that we note that passing of Roy Rayner, VK2DO late of Yass NSW, on November 1st last year, just a month off his 90th birthday. While Roy had remained active on the air on both phone and cw until just a few years ago, his move from the family home to retirement village effectively ended his operation. Roy kept a mental note, in addition to his formal station log of how many qsos he had had. While the number nearly reached 100,000, each person he worked would remember his warm and encouraging on air style that made you look forward to the next contact.

Roy used to say he was born on washing day, characteristic of his humorous approach to life's matters. His introduction to radio seemed to be love at first sight, a travelling road show demonstrating the new medium and entrancing him henceforth. The demonstration didn't work, which probably equipped him for the role Murphy plays in amateur matters. Roy

was a naturally adept cw operator and thought nothing of lengthy QSOs at upwards of 30 wpm with close friends such as Peter 2PA and Col 2ASF. Roy was trained on the bug but embraced the earliest electronic keyers, strapping two morse keys back to back with improvised levers, later progressing to an automatic keyboard to maintain his speed.

I first met Roy at the 1973 Easter convention in Canberra. At that time, I was a few months short of getting on air, despite having passed the exam, I was not yet fifteen. Roy undertook to be my first contact on that winter night, a QSL card arriving by post the next day. Eight years ago, I interviewed Roy regarding the highlights of his amateur radio life. The tape formed the content on a Sunday night divisional broadcast and drew the largest callback list for years, each person having found enormous interest in Roy's fascinating and humorous reminiscences, perhaps

reflecting an era which many of us miss.

Roy worked in numerous fields including alternative morse codes during WW2 and continued in his working life in the field of communications with the electricity commission. Roy made it his passion to encourage others to join our hobby, motivating young and old hobbyists to persevere through the hoops until they were made welcome into the fold.

His reputation as a skilled pianist and organist found him in high demand for community functions and dances and up until leaving his family home; he maintained his keyboard technique regularly performing in the local region and on many occasions, professionally.

Roy's wife Wardie passed away in 1986. He is survived by two of his three sons, five grandchildren and nine great grandchildren. It was Roy's wish that his call sign be handed on to Christopher, VK1DO for its continued on air use in NSW. Farewell good friend SK

A PSK31 Tuning Aid

Don Urbytes, W8LGV

Do you find it difficult to tune in a PSK31 signal? Here's a helping hand!

When I read Steve (WB8IMY) Ford's PSK31 article in the May issue of QST (ref 1) I was hooked! I could not wait to give PSK31 a try! My initial enthusiasm was dampened a bit, though, when I discovered I had difficulty tuning in the narrow-bandwidth PSK signals. My HF rig is a computer-controlled Kachina transceiver (ref 2) that operates in a Windows-controlled environment. I really enjoy using this rig, but when it came to tuning in a PSK signal, I hit a snag: The Kachina allows opening only one window at a time. Because tuning the Kachina requires displaying its virtual control-panel screen, I'm not able to display and use the PSK software's tuning screen. To overcome this nuisance, I developed the PSK31 Tuning Aid. Although the Tuning Aid is designed primarily for use with the Kachina, it is simple enough to easily be adapted for use with any transceiver.

Circuit Description

Refer to the schematic in Figure 1. Signals and DC power from the Kachina are routed via a cable connected between the transceiver's ACC-1 jack and a DIN jack (J3) on the back panel of the Tuning Aid. If you're using the Tuning Aid with a transceiver other than a Kachina, feed the incoming audio signal into phono jack J1 (mounted next to J3). Power the circuit with a 9 to 12-V DC supply connected to J2; you can use an appropriately sized wall transformer.

The 5-V DC supply developed by U1 powers the op amps and tone decoders which draw a total of about 100 mA.

As shown in Figure 1, the incoming signal is fed to U2A, an LM2904 voltage follower, through a low-pass filter consisting of a R3 and C3. The second half of the LM2904 (U2B) provides a gain of 10 and delivers the amplified signal to the inputs of three NE567 tone decoders, U3 through U5. Biasing networks on the noninverting inputs of U2A and U2B (R4/R5 and R7/R8, respectively) allow the signal to swing positively and negatively without becoming distorted.

The Tuning Aid uses three fixed decoder frequencies. While tuning, you can determine if the incoming signal is below, above or exactly at 1 kHz. U3 is tuned to approximately 900 Hz and U4 to exactly 1 kHz. U5 responds to an input frequency of approximately 1100 Hz. R13 (at pin 6 of U4) is used for fine-tuning to set the 1-kHz signal response of U4. Whenever the audio-input frequency matches that of one of the decoders' design frequencies, pin 8 of the respective NE567 (U3-U5) goes low, causing the associated LED (DS2, DS3 or DS4) to illuminate. For example, if the LOW LED (DS 2) is illuminated when tuning in a PSK signal, tune your transceiver for a Tuning Aid input-signal frequency increase to light the yellow 1-kHz LED. If the HIGH LED (DS4) is lit, an input-signal frequency decrease is

required. R14, a 2.5-kohm potentiometer (FILTER) connected to U4 pins 5 and 6, acts as a bandwidth control that allows changing the capture range of the Tuning Aid.

Assembly and Alignment

Construction and alignment of the PSK31 Tuning Aid are simple and straight-forward; component layout is not critical. I built my prototype using RadioShack general-purpose ICPC boards, but ready-made PC boards are available from FAR Circuits (ref 3). The enclosure shown in the photographs is one I picked up at a local swap meet; any enclosure large enough to hold the components should do. My enclosure measures 1 5/8 x 7 1/4 x 5 3/8 inches (HWD).

To align the three frequency-decoder sections, use a signal generator and frequency counter to ensure accurate frequency measurement. While aligning my prototype, I fed a 900-Hz signal into U3 and hand-selected the value of R10 to decode that signal. With a value of 12 kohm, I am able to decode a frequency of about 890 Hz. The response frequencies of U3 and U5 do not have to be exact. U5 is tuned similarly to U3 but this time an 1100-Hz signal is used. With a value of 9.1 kohm for R16, U3's decode frequency is about 1110 Hz.

Setting up U4 requires just a little more time. Feed a 1-kHz signal into U4. Keep the bandwidth wide (high



The Tuning Aid's front panel is clean and functional. From left to right are the ON/OFF switch, with DS1 above it, DS2 (LOW), DS3 (1 kHz), DS4 (HIGH) and the GAIN control, R2.



On the PSK31 Tuning Aid's rear panel are (left to right) the FILTER control (R14), TUNE pot (R13), dc input jack J2, fuse holder, and J1 and J3 (labeled SIGNAL).

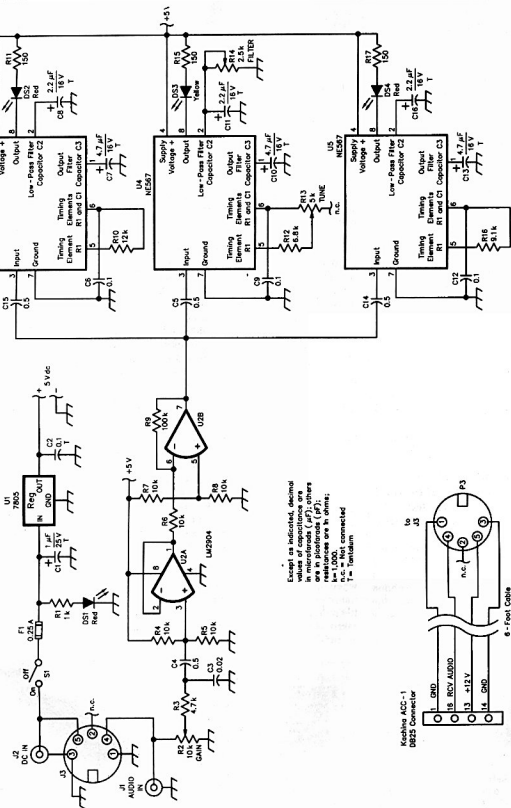


Figure 1—Schematic of the PSK31 Tuning Aid.

Components

Unless otherwise specified, resistors are $\frac{1}{4}$ W, 5% tolerance carbon-composition or film units. For part numbers in parentheses,

RS=RadioShack; ME=Mouser

Electronics, 958 N Main St, Mansfield, TX 76063-4827; tel 800-346-6873, 817-483-4422, fax 817-483-0931;

sales@mouser.com; http://

WWW.Mouser.com.

Equivalent parts can be substituted;

n.c. indicates no connection.

C1—1 μ F, 25 V tantalum (RS 272-1434)

C2—0.1 μ F, 16 V tantalum (RS 1129-5821)

C3—0.02 μ F, 16 V (ME 140-PF1H203)

C4, C5, C14, C15—0.5 μ F, 16 V (ME 140-PFIH474K)

C6, C9, C12—0.1 μ F, 100 V polypropylene (ME 1429-1104)

C7, C10, C13—4.7 μ F, 16 V tantalum (ME 581-4.7KI6V)

C8, C11, C16—2.2 μ F, 16 V tantalum (ME 581-2.2KI6V)

DS1, DS2, DS4—Red LED (RS 276 018)

DS3—Yellow LED (RS 276-011)

F1—0.25-A fuse (RS 270-1002)

J1—Phono jack (ME 161-2052)

J2—DC input jack (RS 274-1565)

J3—5-pin female DIN jack (RS 274005)

J4—DB25 male connector (RS 2761547); mates with the Kachina ACC-1 connector.

P3—5-pin in-line male DIN plug (RS 274-003)

R2—10 kohm pot (ME 31CN401)

R13—5 kohm pot (ME 31CN305)

R 14—2.5 kohm pot (ME 31 CN302)

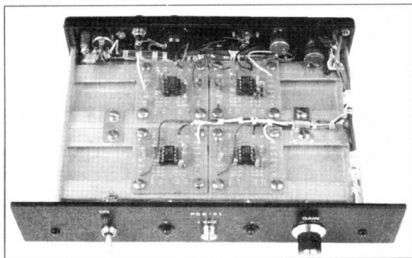
S1—SPST toggle, (RS 275-624)

U1—7805 positive 5 V, 1 A voltage regulator (RS 276-1770)

U2—LM2904 op amp (ME 513-LM2904N)

U3—NE567 tone decoder (ME 513-NJM567D)

Misc: PC board (see Note 3) or dual general-purpose ICPC boards (RS 276-159), enclosure, fuse holder (RS 270-364), IC sockets, hardware.



An inside view of the author's neatly built prototype using RadioShack general-purpose IC PC boards. (PC boards are available from FAR Circuits, see Note 3). A surplus enclosure ($1\frac{1}{2} \times 7\frac{1}{2} \times 5\frac{1}{2}$ inches [HWDI]) houses everything with room to spare.

resistance at the FILTER control) and adjust R13 for a 1-kHz decode. Once U4 is tuned to 1 kHz, you can adjust the FILTER control to whichever bandwidth you desire. When the FILTER control (bandwidth) is set narrow, you need to be more careful when tuning your transceiver. The Tuning Aid's GAIN control setting is not critical; normally I set it at midposition.

Summary

I have used this Tuning Aid for a few months now and find it quite useful and easy to operate. It works well with software such as PSK for Windows by Peter Martinez, G3PLX, and Logger by Robert C. Furzer, K4CY4. Give the Tuning Aid a try. I'm sure it will add to your PSK-31 operating fun!

Notes

1. Steve Ford, WB8IMY, "PSK31-Has RTTY's Replacement Arrived?", QST, May, 1999, pp 41-44.
2. Larry Wolfgang, WRI B, "Kachina 505DSP HF Transceiver," Product Review, QST, May 1998, pp 63-67.
3. PC boards for this project are available from FAR Circuits, 18N640 Field Ct, Dundee, IL 60118-9269; tel 847-836-9148 (voice and fax). Price: \$5.50 each plus \$1.50 shipping for up to four boards. Visa and MasterCard accepted with a \$3 service charge.
4. You can find both programs on the

Internet; try these sites: PSK for Windows <http://aintel.bi.edu/es/psk31.html>; Logger <http://www.chroniclenetworks.com/~dwm/Logger.htm>

The Author

Don Urbytes, W8LGV, received his General Class Amateur Radio License in 1951 at the age of 15, and upgraded to Extra Class about 10 years ago. Don literally grew up in the broadcast-engineering field, having started work at the age of 16 and making the transition from radio to TV in the '50s. Don attended electronics school at Fort Monmouth, New Jersey, from which he graduated with honors in electronic countermeasures. Don was in the US Army Security Agency for three years and later worked for seven years in the Process-control field "making silicon." The last 26 years of Don's working career were at the General Motors Corp. Don retired in 1998 as Senior Experimental Engineer in Electronic Instrumentation and Controls. You can contact Don at 2297 W Catalina View Dr, Tucson, AZ 85742-4481; durbbytes@email.msn.com.

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Reproduced from QST, December 1999, pages 35 — 37

History of Packet Radio Part 2

Packet Radio Information Sources

Steve Blanche VK2KFJ
Email: vk2kfj@qsl.net

This article covers the use of the Internet for finding information and software relating to Packet Radio.

Some people think the Internet as just a pest, which is destroying our hobby of amateur radio, well, I think of the Internet as a tool and I have used it as a tool for over 10 years now, to enhance my hobby. The Internet is just a large worldwide library of information; it is also a medium for transferring information and data from one place to another, across the globe. From the point of view of our hobby amateur radio, we can use the facilities of the Internet, to collect information from other amateurs worldwide or disseminate information to other amateurs, particularly, when dealing with new experimental modes.

Unfortunately, as the Internet is like a large worldwide library, it becomes quite difficult to find exactly what you want, amongst the myriad of Internet web sites across the world. In this article, I will endeavour to present some useful web site URLs (Universal Resource Locators), listed by categories, primarily for the mode of Packet Radio, however I will add some other sites for other digital communications modes, as they often overlap, or have some indirect involvement with the mode. Hopefully, this will help those new to this mode to find the information they need to get into the mode, or further enhance experimentation, for those already using this mode.

Australian Packet Radio/ Digital Communications groups:

- <http://www.aapra.org.au/> Australian Amateur Packet Radio Association (AAPRA)
- <http://www.mprg.ampr.org/> Melbourne Packet Radio Group (MPRG)
- <http://www.powerup.com.au/~qdg/> Queensland Digital Group (QDG)

- <http://www.sapug.ampr.org/> South Australia Packet Users Group (SAPUG Inc)
- <http://www.waadca.asn.au/> Western Australia Amateur Digital Communications Assoc. (WAADCA)
- <http://marconi.mpce.mq.edu.au/VK2GMU> Macquarie University - Packet Radio Project

International Packet Radio/Digital Communications groups:

- <http://www.tapr.org/tapr/> Tuscon Amateur Packet Radio Group (TAPR) early pioneers of packet radio. Creators of the TAPR TNC (Terminal Node Controller)
- <http://www.athnet.ampr.org/> ATHNET - Athens TCP/IP network (official site)
- <http://w4u.eexi.gr/~sv1rd/index.html> Athens Packet Radio Internet Working Group (ATHNET)
- <http://www.prug.or.jp/> Packet Radio User Group (Japan) very TCP/IP oriented
- <http://wetnet.wa.com/index-ismap.html> Washington TCP/IP Users group an experimenters group near Seattle, Washington, USA.
- <http://www.cam.org/~radio/index.html> packet group of Montreal, Canada (catch up on your French)
- http://lx0.restena.lu/~rl-m_digital.htm packet group of Luxembourg, very well organised TCP/IP network

Packet Radio software and information sites:

- <http://www.linux.org.au/LDP/HOWTO/AX25-HOWTO.html#toc25>

Setup/Configuration page for packet radio operation under Linux operating system.

- <http://www.tiac.net/users/henley/eztpage.html> EASYTERM for Windows, user software for AEA, HAL & Kantronics TNC's, under MS-Windows.
- <http://www.peaksys.co.uk/> WINPACK packet radio terminal, from G4IDE, user software for MS-Windows.
- <http://www.qsl.net/oe8dj/index.html> PR4WIN Packet Radio for Windows, user software for MS-Windows, for KISS compatible TNCs.

Packet Radio PC Sound Card software:

- <http://www.geocities.com/CapeCanaveral/Hangar/1632/flexnet.html> ve4klm flexnet page
- <http://www.muenster.de/~welp/sb.htm> Oliver Welp: Amateur Radio Soundblaster Software Collection, using a sound card under Linux, as a modem for amateur packet radio
- <http://www.csrnet.org/N7MEA/packet.html> FlexNet Info site
- <http://oit.csom.umn.edu/~csmartine/flexnet.htm> Charlie KB0RoC's FlexNet site
- <http://web.infoave.net/~N4WYK/sound.htm> APRS with a Sound Card, by KC2RLM
- <http://www.ife.ee.ethz.ch/~sailer/ham/soundmodem/> Multiplatform Soundcard Packet Radio Modem Driver Software by Thomas Sailer, HB9JNX/AE4WA. This software allows a standard PC soundcard to be used as a packet radio "modem".
- <http://www.raag.org/sv2agw/> SV2AGW TCP/IP sound card packet engine. TCP/IP software for MS-Windows

<http://www.elcom.gr/agwpebbs/> A web based newsgroup with discussion about Sound Cards.
<http://www.qsl.net/soundpacket/winpack.htm> Using WinPack with a sound card and the SV2AGW packet engine.

Packet Radio BBS & Networking software and information sites:

<http://www.f6fbb.org/> F6FBB's FBB packet site, a very popular BBS software package
<http://www.qsl.net/fpac/> FPAC International home page, a derivative of ROSE networking software

Packet Radio FTP sites:

FTP (File Transfer Protocol) is a protocol for transferring files, associated with TCP/IP, just as HTTP is a protocol for displaying web pages, with FTP you can peruse over directories and list files, then you can either upload files to a site (if permitted) or download files from the FTP site to your own computer. The sites listed here are good sources of software and documentation for packet radio, as well as most other forms of amateur radio related software. Web browsers such as Internet Explorer permit you to access and perform FTP transfers, just by entering the FTP URL below, otherwise there are FTP software you can download, usually for free, for non-commercial, private usage, see the miscellaneous category, for the WS FTP site.

<ftp://ftp.ucsd.edu/hamradio/packet/> a US FTP site including plenty of packet radio software.
<ftp://ftp.qsl.net/> another US based, amateur only FTP site.
<ftp://ftp.tapr.org/> the TAPR FTP site, primarily packet radio.
<ftp://pc.usl.edu/pub/ham/jnos> J-NOS TCP/IP packet software
<ftp://ftp.lantz.com/tnos/> T-NOS TCP/IP packet software
<ftp://ftp.prug.or.jp/pub/> PRUG in Japan, a lot of experimental TCP/IP packages, including JNET-PAC

Individual Packet Radio operator's web sites:

<http://frshare.static.mel.iuhug.com.au/> VK3FRS packet BBS & Gateway home page

<http://www.qsl.net/vk2kfj/pacradio.html> VK2KFJ packet information and links page
<http://www.wagate.com/> N7NEI's packet radio home page
<http://www.packetradio.com/index.html> K4ABT's Packet Radio information site, lots of good information & links.
<http://www.qsl.net/vk3bvp/> VK3BVP's packet radio web page

Packet Radio Utility sites:

<http://www.wia.org.au/links/Packet.html> the Federal WIA Packet Radio links page, very good starting point.
<http://www.ozemail.com.au/~vk2wi/Packet.html> WIA NSW Division, packet radio listing
<http://hamgate.rpi.net.au/netstat.html> Network Status page
<http://www.packetradio.com/index.html> K4ABT's packet & digital modes site

Some people think the Internet as just a pest, which is destroying our hobby of amateur radio, well, I think of the Internet as a tool...

Packet Radio & Satellites sites:

<http://w3eax.umd.edu/spre/spre.html> SPRE Satellite-Packet GPS Reporting/Tracking
<http://www.amsat.org/> AMSAT international Amateur Satellite group

Miscellaneous sites:

<http://www.hamsearch.com> ham radio Internet search engine
<http://www.hamfind.com> another ham radio Internet search engine
<http://www.linux.org.au/> LINUX operating system, home page
<http://www.tapr.org/tapr/html/ptkf.html> TAPR Special Interest Group, heavy duty experimentation here. A well stocked directory full of all aspects of packet radio
<http://www.ipswitch.com> WS FTP download site, FTP software package for MS-Windows 16bit and 32bit versions. Free for personal home use.

<http://www.vk2ca.com/> an amateur radio web site, for VK amateur radio operators.
<http://www.qsl.net/> a US based amateur radio web site, for amateur radio operators.
<http://www.eham.net/> a US based amateur radio web site, for amateur radio operators.

Internet Email mailing lists:

There are discussion groups, which operate over email lists, or otherwise known as mail reflectors, these are available for a multitude of discussion groups, including packet radio, as well as most of forms of amateur radio activity. These mailing lists/mail reflectors work on the principle of people subscribing themselves to the mailing list, then any member of that list posts an email to the mailing list, that a copy of that email is forwarded by the Internet mail list server, to each of the members of that email list. This means people with access to the Internet from all over the world can carry out discussions over a common medium. One such list for amateur packet radio operators in VK is the vk-packet@yahoogroups.com mail list, postings are sent to this address, by subscribers to that list.

To subscribe just send an email to vk-packet-subscribe@yahoogroups.com There is a similar list on the www.qsl.net website for packet radio discussions in USA. There are also other packet radio discussions for individual groups and organisations worldwide, also on the www.yahoogroups.com site. (yahoogroups.com was previously egroups.com and before that, it was onelist.com). There is a mail list for the SV2AGW TCP/IP engine, at SV2AGW@yahoogroups.com

Following articles:

Coming up in progressive articles are:
Insight into packet radio operation on the Linux Operating System.

Overview of other packet radio terminal software packages including:

J-NOS, T-NOS, EASYTERM, WinPak, PR4WIN, SV2AGW & more.

Trademarks:

MS-Windows is a trademark of Microsoft Corporation.

Linux is a trademark of Linus Torvalds.

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Multi-Octave Bidirectional Wire Antennas

This simple straight-line antenna works across three harmonically related bands.

By Robert Zavrel Jr, W7SX

8122 Reynard Road

Chapel Hill, NC 27516

e-mail rzavrel@vnet.ibm.com

From QEX July August 1998 pages 50-52

With the sunspot cycle just leaving its theoretical minimum (1998), the low bands are still experiencing unprecedented popularity. For several years, I have been using tree-supported wire antennas on 80, 40 and 20 metres with gratifying results. The total cost of a three-wire antenna farm suspended from high pine trees can be kept under \$500 (including tree climber fees!). Yet with no towers, rotors, aluminium tubes, traps, or coax I managed 219 countries confirmed on 40 metres with 800 W and a casual operating style over the past four years. This represents impressive "bang for the buck". Furthermore, I accomplished this from California, where only five DXCC countries lie within 2000 miles!

Since moving to North Carolina, I've wanted to explore improving the multiband performance of a center-fed wire antenna. In particular, I've wanted to achieve a bidirectional pattern on multiple bands, developing as much

gain as possible by using the greatest possible wire length on each band. It is very convenient to know that a given antenna's performance will be optimum for Europe/ZL or South America/JA on several bands.

Dipoles using traps can provide multiband bidirectional operation with the added advantage of normalized feed-point impedances on multiple bands. However, trap dipoles are more expensive, heavier and provide no more gain than a dipole on any band of operation. Traps are associated with losses and can have problems dealing with high-power operation. Furthermore, coax-fed trap dipoles typically have narrow low-SWR bandwidths.

Although the feed-point impedance varies widely, a simple center-fed wire antenna exhibits a bidirectional pattern over 1.25 octave, if the wire is cut as a half-wave dipole on the lowest operating frequency. For example, an 80 metre

dipole will function as a two-element collinear on 40 metres and an extended double Zepp on 34 metres, which is just a bit too low for the 30 metre band. So, you get only two bands from this antenna. The use of open-wire feeders and an antenna tuner [1] solves the matching problem and leaves the entire antenna length active on all bands, with associated gain increases. However, I wanted to operate over two octaves (80, 40, 30 and 20 m) and achieve some gain over a dipole on the three higher bands. I also wanted to keep the design simple, lightweight, inexpensive and QRO friendly. (As an aside, it is often desirable to shorten the length of the wire on the lowest operating frequency with little or no sacrifice in performance.)

As the length of a center-fed, half wave dipole increases, the broadside gain also increases. A one wavelength centre-fed dipole is also referred to as a 'two element collinear' or 'two half-waves in

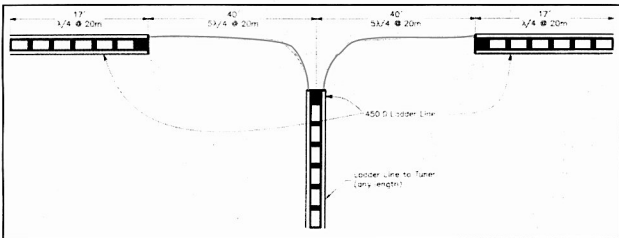


Fig 1 An illustration of W7SX's end - linear loaded dipole for 80, 40 and 20 metres.

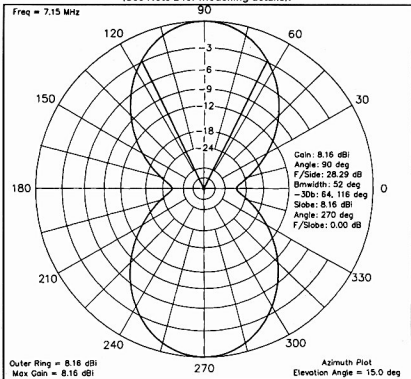
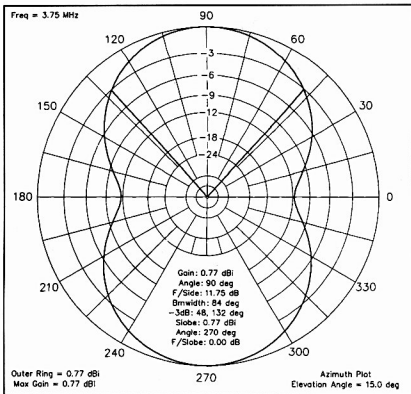
phase." The two-element collinear has a free-space gain of about 2 dBd. Maximum broadside gain from simple centered wire occurs when the total length of the wire is 1.25 wavelength. This is the "extended double Zepp" with a free space gain a little over 3 dBd. By way of comparison, a two-element Yagi has a free-space gain of about 5 dBd. Making the wire longer still, the broadside gain begins to decrease and the pattern gradually splits into four major lobes, off the broadside axis instead of the two-lobe-on-axis pattern of the shorter antennas.

A Solution: End-Shorted Stubs

Start with a 20 metre extended double Zepp (an 80 foot center-fed wire) for maximum broadside gain from a single wire. Add 1/4 wavelength stubs for 20 metres (=17 feet long) to the ends and short the stub's outer ends as shown in Fig 1. The stub can be constructed from nearly any open-wire line, but keep the high voltages associated with QRO operation in mind. I have had no problem using 450 ohm ladder line while running up to 1.5 kW on all bands.

The stubs at the ends of this antenna perform two functions: First they are 20 metre traps that can handle high power, have very low losses, are lightweight and inexpensive. Second, they provide linear end loading on 80, 40 and 30 metres. The antenna gain ranges from 0 dBd on 80 metre to 3.1 dBd on 20 metres.

Figs 2, 3 and 4 show the radiation patterns for a 114 foot version of the antenna at a height of 80 feet, over average ground. [2] On 30 metres the pattern has several major lobes, resembling a clover leaf. If 114 feet is too long, the antenna can be shortened to about 100 feet (keep the stubs at 17 feet) with a loss of about 1 dBd on 20 metres, but little effect on 40 and 80 metres. A 40 through 10 metre version is also in use, with 8.5 foot stubs, and a total length of 57 feet. I use two 114 foot antennas with orientations for Europe/ZL and South America/JA. The 57 foot antenna is broadside to the east and west. This combination of antennas provides full-azimuth coverage on 80 metres, a slight north/south null on 40 metres and several nulls on 20 metres. My primary DX target areas are well covered, however.



Construction

There are many possible construction techniques for this antenna. I used 2x3x1/8 inch-thick Plexiglas plates for the five connection points along the antenna. I drilled holes in the plates that are just large enough to pass the antenna and stub wires; this provides some strain relief. The ladder line is fastened to the faces of the Plexiglas plates with 1/4 inch nylon nuts and bolts. Each bolt passes through the center of the ladder line's plastic web insulator and the Plexiglas. The non-conducting nuts and bolts help prevent arcing across the line. I don't climb trees! I prefer to have an eyebolt secured to the tree trunk as high as the climber feels safe. The eyebolt holds a pulley, which holds the rope.

[Editors note: By making the line twice as long—running from ground to the block and back to form a continuous halyard—the upper end of the line can be retrieved from ground level just in case the antenna wire or one of the insulators breaks]

The rope connects to the end of the antenna and 35 pound counterweights [3] keep the 114 foot antenna nearly horizontal.

Conclusion

This very simple, lightweight, inexpensive bidirectional antenna solution, permits operation on 80 through 20 metres or 40 through 10 metres. These antennas have proven themselves well.

References

1. "Up Front in QST," QST, April 1995, p 11.
2. Figures 2, 3 and 4 were modelled on EZNEC 1.0 for presentation here on the standard ARRL antenna grid. The maximum gains and general shapes conform well to the author's plots, while the nulls are somewhat (about 6 dB, maximum) deeper than on the plots shown here. The models use high accuracy modelling over average (0.005 S/m, $\epsilon = 13$) ground. You can download the EZNEC description files from the ARRL 'Hiram' BBS (Téle 860-594-0306), or the ARRL Internet ftp site: oak.oakland.edu (in the pub/hamradio/arrl/qex directory). In either case look for the file ZAVREL.ZIP.
3. "Technical Correspondence," QST, March 1992, p 84

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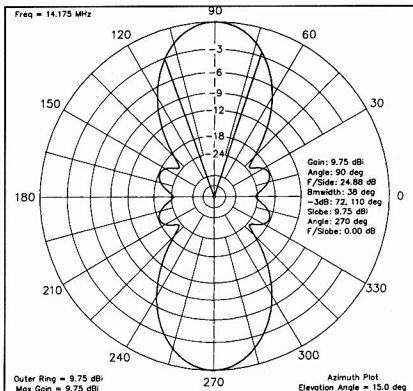


Fig 4 Azimuth plot (15° elevation) for the multioctave antenna at 14.175 MHz. (See Note 2 for modelling details)

See you in Palermo!

at the International YL Meet 2002

From the podium at YL2000 in Hamilton, Ruth IT9ESZ, President of the Italian YL body, Elettra Marconi, invites all YLs to the next International YL Meet in Palermo in June 2002.

For more information see Ruth's blog on page 15.



Women: a global presence in Amateur Radio

This year we have three profiles of women in radio from different parts of the world.

Elizabeth VE7YL



shortly after WW2, inspired by the eight or more YL radio operators who served on ships of the Norwegian Merchant Navy during WW2 and the several others taken on in the same capacity after the end of the war.

It is not so surprising that Elizabeth wanted to go to sea. She had passed through the Suez Canal seven times and lived in four countries by the time she graduated from radio school. Her parent's reluctance to see their daughter sail away on an oil tanker during wartime delayed Elizabeth's maritime adventures but eventually her opportunity came in 1947. The intervening years were spent as a coast station operator and the special station of the Canadian National Defence Department so she had lost none of the knowledge or skill she had gained in radio school.

Elizabeth had four years as a maritime operator and enjoyed every minute. The two ships she sailed on were part passenger carriers so she met people who subsequently became her good friends.

In 1951 she married Reg, an engineer with Shell so she continued to travel the world. Twenty years later Elizabeth and Reg were introduced to amateur radio

and were hooked! From then on they both had licences in each of the countries in which they lived. It was Elizabeth who was the most active operator but this was only possible because Reg was a whiz at raising aersials in the most unlikely places.

By 1980, when Reg retired, Elizabeth had earned her DXCC YL with a lot of help from the members of the "Natter Net". They were able to meet some of the stations Elizabeth had worked when they visited Australia and New Zealand and attended two SEANet conventions in '78 and '80.

Elizabeth was given the callsign VE7YL which she has held ever since, in 1984. Since 1990 when Reg became an SK Elizabeth has participated in three DXpeditions, including the Norfolk Island one and activated 33 islands around Vancouver and in the Fraser River, thus she has given many other amateurs a chance to add a new "country" to their list.

Elizabeth's answer, when asked what ham radio meant to her was, says it all.

"What can I say about Ham radio you don't already know? It is a wonderful hobby no matter which part of it you pursue. Enjoy it YLs - make yourself heard!"

Elizabeth is well known to many amateurs from all round the world. She holds the DXCC with 237 YL countries and 330 on the ARRL listing!!

Her radio experience was on CW until, in Indonesia, where she held the callsign YB0ADT she was introduced to SSB. This, in turn, led to the "Natter Net" as Elizabeth found more and more YLs on the air. However, she still loves operating on CW and used this mode extensively last year on Norfolk Island as part of the AX9YL expedition that followed the YL2000 meet in Hamilton.

Elizabeth's radio experience began

Brenda VK3KT



Congratulations are in order to Brenda who is now one of the Directors of the WIA. She is the first YL to hold such a position but is well suited to do so. Brenda is well known to readers of AR for which she has been the Education Coordinator for many years. She has probably been involved in almost all the development and changes that have taken place in the curriculum and operation of the examination system for over 20 years. She has held a license since the 1950's and with a husband and four children all holding radio licenses is part of a (world?) record we could all aim to emulate.

Brenda was a school teacher for many years where, as well as a full teaching

program, she organised work experience programs and ran radio classes as an elective and established a school radio club.

Brenda has held executive positions in the WIA(Vic) for a number of years and attended the last 3 IARU conferences where she has served on several committees set up to study particular aspects of our hobby.

If she only achieves half of the ideas to advance our hobby that she has shown an interest in, she will help to improve conditions for us all. One high aim is to increase the number of amateurs, which means first increasing public awareness of us and the great range of ways in which we can be amateurs

Women in amateur Radio (cont.)

Ruth IT9ESZ



Ruth has held an amateur licence since the 80's. She is encouraged by her OM Vincent though she has not yet persuaded him to join our ranks.

Since gaining her licence Ruth has participated in several DXpeditions to islands of the Mediterranean and the YLs throughout Italy, including San Marino, Tunisia and a remote island off shore from Tunisia. She was the first YL to operate from the Vatican itself.

When visiting Ruth LA6ZH she operated in tandem with her namesake from Oslo and from Lofoten Island in North Norway, where Ruth and her husband have a holiday place. Then the two Ruths caused a pile up when they operated from Reykjavik in Iceland, one on SSB and the other on CW!

She is President and DX correspondent for the Italian YL body, Elettra Marconi, and is part of the group of YLs who are arranging the next International YL Meet in Palermo in June next year.

Ruth has attended international YL meets in Stockholm (1991), Osaka (1993), Berlin (1995) as well as Svalbaard (1998) and Hamilton in 2000 so she is well qualified to arrange such a meet as well as being well known to many YLs both on air and in person. I am sure she will be delighted if some VKs include a side visit to Palermo in their overseas itinerary. As more information comes to hand it will appear in the ALARA column.

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You, too, can write a story or a column for AR

Do you have a story that would interest your fellow hams? Or a superb photograph? Or has your special interest made you an expert?

Contact Colwyn VK5UE on edarmag@chariot.net.au or submit articles to:
The Editor, Amateur Radio, 34 Hawker Crescent, Elizabeth East SA 5112

Guidelines for submitting contributions to AR

As with all things, there are some technical rules to follow.

Submitting text electronically

- Microsoft Word please, or other well-known word-processing program. No graphics embedded. Alternatively, submit a 'Text Only' file.

Submitting graphics electronically

- Preparing graphics for print is different from preparing them for screen or laser-printed use.
- Please submit all electronic photographs and tinted diagrams as 300 dpi jpegs*. (Screen default resolution is 72 dpi, which is unsuitable for print)
- Submit electronic line drawings as 300 dpi jpegs, but save as bitmap (not grayscale). Keep line width at least 0.5pt in the published size. (Otherwise the lines disappear in the printing process)
- Submit graphics separately to the text files.

Submitting hard copy

- Hard copy should be as clear and sharp as possible.
- Whenever possible, photograph subjects on a light background. This especially applies to equipment.

Things that cause reproduction headaches

- Graphics imported from the internet.
- Photographs of groups taken with a flash, so that the foreground is too brilliantly lit while the furthest faces are in darkness.
- Low resolution digital photographs
- Flash photographs of people taken against a wall. The cast shadow causes 'big-hair' syndrome!
- The biggest headache: scanned photographs from magazines and brochures. This is because they have already been 'screened' for printing, i.e. they are composed of a pattern of dots. When they are screened again during scanning, the result is a 'moire' pattern. This can be countered by 'blurring', but the quality is seriously impaired.

If these rules are not followed, you run the risk of having your hard work rejected for publication. If in doubt, send hard copy.

**There is an alternative if this makes a file too big to email: acceptable results have been obtained from 72dpi jpegs if the graphic's dimensions (breadth by depth) are at least three times the intended publication size. But it's risky!*

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UA3IAR Switchable Quad for 20 metres

Jim Mackison VK5MB
23 Shillabeer Road
Elizabeth Park SA 5113

The antenna was designed and built originally by UA3IAR in Kalinin, USSR. It was described in the Russian magazine, 'Radio' in June 1978, and also appeared in 'Technical Topics' in the RSGB magazine 'RadComm' in 1978.

Basically the UA3IAR antenna is a two element Quad array supported from a single pole. This is a Quad-type antenna that is fixed, requires no framework of self-supporting elements, and yet can be remotely switched so that the main lobe falls in any one of four quadrants. Since the unidirectional pattern is about 90 degrees wide (between the -3db points) this means that the array provides coverage through 360 degrees with no turning delay.

The array is, in effect, a two element Quad with a fed-reflector. The array is

formed from four half-loops, which can be selected so that at any time two half-loops form the radiator and the other two the reflector. Four-position switching provides the four basic configurations for unidirectional beams. In each position, two half-loops form the driven element, while the other two form the driven reflector with its phasing section of transmission line.

Fig 1 shows the antenna for comparison with a conventional two element Quad. The upper vertices of the UA3IAR Quad are joined together, while

the lower vertices form feed points. Guy wires pull out the middle portions of the loop. All wires, in fact, are held in place by guying rather than by a framework, and all wires are electrically connected together at the top of the array. The switching technique used by UA3IAR is shown in Fig 2. To form a unidirectional radiation pattern it is necessary to provide a suitable phase difference between the current flowing in the two loops. This phase difference is slightly more than 180 degrees. The exact value of phase shift depends upon the effective spacing between the loops, with an initial phase difference of 180 degrees being obtained by suitable connection to the appropriate windings of the ferrite core transformer T1. Extra phasing elements are connected into the loop forming the reflector elements, with all switching provided by relays RL A and RL B. The switching sequence depends upon the position of the selector switch.

As an example, in switch position 1, as drawn, both relays are unenergized and winding L2 of transformer T1 is connected to half-loops *a* and *b* through the coaxial line phasing elements. In this fashion two complete loops (*ab* and *cd*) are formed with *ab* acting as a reflector. In this example the beam direction is that indicated by arrow 1. Arrows 2, 3, and 4 correspond to beam directions of the three other switch positions. Four vacuum relays connected in pairs are used by UA3IAR.

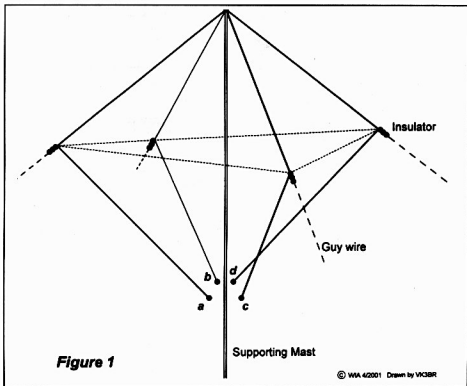


Figure 1

© WAA 4/2001 Drawn by VK3BR

Fig 1 - The UA3IAR switchable Quad antenna for 20 metres, which was developed from a conventional Quad. The four half loops *a*, *b*, *c* and *d* are electrically joined at the top. Pairs of half-loops are used to form the full wave loops which function either as a radiator or, with the additional phasing extensions, as driven reflectors.

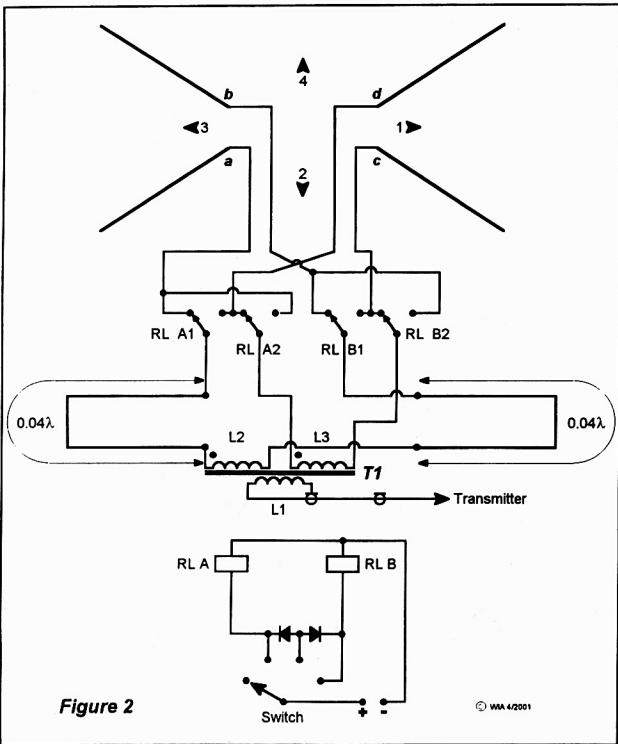


Figure 2

© WAA 4/2001

Fig 2 - The control and switching system. The two 0.04 wavelength extensions are used to provide a 0.08 wavelength phasing section to connect the appropriate loop into a reflector. T1 is a large ferrite core. Dots indicate the winding polarity. Wind L1 spaced around the complete core and wind each of L2 and L3 on half the core. In the absence of relay energising voltage the beam is set in direction 1.

Contact rating of the relays is not important as no antenna switching takes place with power applied to the antenna.

Transformer T1 is wound on a large toroid core (Dick Smith Electronics Balun Kit). L1 has 10 turns, L2 and L3 have eight turns each. The antenna is fed with 75 ohm coaxial line. A 30 ft. mast is used.

For 20 metres, the length of each half-loop of wire is 10.95 metres.

The relays RL A and RL B are 24 VDC, used for refrigeration control. Four core telephone cable was used from the antenna switching box to the shack. A small 24 V power supply and the relay control switch are installed in a metal box located in the shack.

I have used this antenna successfully for about 15 years.

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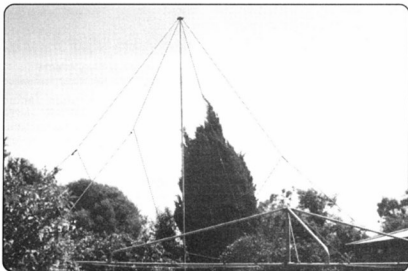
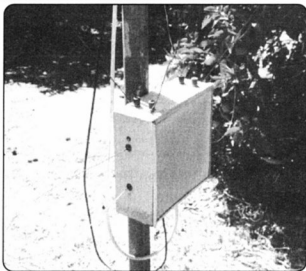
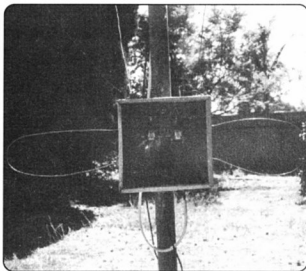


Photo 1: Switchable 20m Quad at VK5MB



UA3IAR Switchable Quad switch box



Switch box and phasing loops

**** Memo for August ****

Remember the ALARA Contest

The ALARA Contest will be in August instead of in November this year, and run for 30 hours instead of 24

**Saturday 25th August (0600 UTC)
to 1159 UTC on Sunday 26th August**

A very friendly, chatty contest; no one is in a hurry to make as many contacts as possible.

Join in the fun! All YLs and all OMs are welcome

Rules were published on page 38 of the May 2001 *Amateur Radio*.



Christine Taylor VK5CTY

VK5CTY@VK5TTY or geencee@picknowl.com.au

Remember - Contest Next Month

The ALARA Contest will be in August instead of in November this year. It will also run for 30 hours instead of for 24 hours.

It will start on the evening of Saturday 25th August (0600 UTC) when most of the activity will be on 80 metres, and continue through the next day to finish at 1159 UTC on Sunday 26th.

By starting and finishing in the evening we hope there will be more opportunities for everyone to participate. You will be allowed to have repeat contacts on the same band and using the same mode as long as there is at least 1 hour between contacts so there should be many more contacts to be made.

It is a chatty contest; no one is in a hurry to make as many contacts as possible. Please join in. All YLs and all OM's are welcome and we love having Clubs participate. All the rules are on page 38 of the May 2001 "Amateur Radio".

If you would like to add a colourful Award to your "brag board" here is the perfect chance to obtain the 10 YL contacts from at least 5 states. Our Awards Custodian, Jean Shaw, needs some extra work.

If you do participate in the Contest remember to send in your log. Marilyn VK3DMS has taken out a special email address for your logs if you prefer to send them that way. Please use gsyme@hotmail.com for logs or send to Marilyn QTHR the callbook.

Please join in and send in your logs

The 222 Net

The YL 222 DX Net is on air every Monday on 14.222MHz. It is under the very efficient control of June VK4SJ, now, and has seen a number of interesting DX stations recently.

Please call in from 0530 UTC. June will be delighted to hear you and you will be welcomed immediately.

Some of the regular VK callers are Gwen, VK3DYL, Maria VK5BMT, Bev VK6DE, Dot VK2DB and Robyn VK3WX.

Overseas stations often include Elizabeth VE7YL, Ruth IT9ESZ, and Ella G0FID. One of the less common stations and countries on recently was Inger OZ7AGR.

With the high sunspot number propagation on our side this is possibly the best time ever to enjoy DX amateur radio. Whether you are a YL or an OM, why not listen in or call in sometime. I am sure you will not be sorry.

Lighthouse Operating

A number of ALARA members have had a great time operating from or to lighthouses all round the world. Dot VK2DB has worked some of the NSW stations in the last couple of years and the most recent devotee is Susan VK7LUV. With her family Susan makes it a picnic or camping opportunity to see some of the more remote places in Tasmania and have a fun time as well. You may have heard her last month or earlier in the year.

There is an award for working these interesting sites, which would be a new addition for you to show visitors to your shack.

Lighthouses are particularly appropriate for radio amateurs as Michael Faraday, one of the founders of electromagnetic theory, held the position of advisor to Trinity House (the controlling body, to this day, of all the lighthouses around the British Isles) for almost 30 years.

Among other things he was involved in for Trinity House was solving the problem of the condensation that dimmed the light on cold nights. He found that the problem was caused by the large amounts of water produced when whale oil is burned. He designed a chimney that carried away the moisture so that the lantern windows remained clear in every weather condition. These chimneys were so successful they were installed in many buildings including Buckingham Palace.

He also identified the cause of the illhealth suffered by the men manning the Smalls lighthouse. The water, collected from the roof, was contaminated by copper compounds

produced by the action of sea spray on the copper roofing of the lighthouse. The keepers were warned not to use the water collected from the roof "for culinary purposes".

A few years later, when the first electric lights were tested, Although the light produced was "most beautiful", Faraday vetoed their use because of the noxious fumes from the batteries and because of the need to have battery specialists on site as well as the normal lighthouse keepers.

When electric generators powered by steam were designed by Frederick Holmes, it was a different matter. After Faraday had tested this system and found it to be satisfactory he authorised it to be installed. So in 1858 the first pair of these generators were installed in the South Foreland lighthouse. The expense of electricity, though, caused the experiment to be suspended in 1880. It was not till 1922 that the first modern electric lamp was used in a lighthouse.

(This information was taken from an article in New Scientist of 26 May 2001)

Did You Hear A Familiar Voice?

In May there was a small earthquake in the Bendigo/Castlemaine area. Our Immediate Past President, Judy VK3AGC was shaken by the tremor. Uncertain what it was, Judy rang the local broadcast radio station. The young man she spoke to told her that it had been an earthquake and asked her for her 'on the spot' experiences. As we would all do, Judy told him all about it quite cheerfully, glad to know that she has not imagined it all.

A little later that afternoon Judy had the radio on in the car when she heard her own voice coming out of the speaker. She was so surprised she almost had to stop the car.

Her 'eyewitness interview' had been recorded and was replayed in all the subsequent news reports of the event.

Judy has discovered that she has a lot of friends who listen to the local radio station and who recognised her very well indeed. Did you hear her?

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AR Beyond Our Shores

David A. Pilley VK2AYD
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The following are taken from various overseas magazines such as QST, Rad.Com, as well as various Amateur Radio Internet news web sites. News now travels so fast it is hard to keep you up to date.

The Colvin story

The Yasme Foundation is writing a book which includes W6KG and W6QL.

Perhaps members may have stories they can pass on to Jim Cain. The following was on the ARRL News Letter.

A book now in the works will highlight the adventures of the late husband-and-wife DXpedition team of Lloyd and Iris Colvin, W6KG and W6QL.

Author Jim Cain, K1TN, is seeking the assistance of radio amateurs and others around the world to share reminiscences, anecdotes, photos and other relevant information for possible inclusion.

Commissioned by the Yasme Foundation, the soon-to-be-published book will include a history of the Foundation and a biography of the Colvins. Anyone with information to share may contact Jim Cain at yasmebook@mybizz.net.

Iris Colvin died in 1998, and Lloyd Colvin died in 1993. Between the 1960s and the early 1990s, the Colvins took ham radio to some 200 countries—including nearly every member-nation of the United Nations. They racked up more than a million contacts over the years and amassed one of the largest QSL collections in the world—more than a half million cards at last count.

Yasme Foundation President Wayne Mills, N7NG, said the Foundation was extremely pleased to have retained Cain, a former ARRL Headquarters staff member and a ham since 1961, to research and write the Colvins' and the Yasme Foundation's story.

The Yasme Foundation is a not-for-profit corporation organized to conduct scientific and educational projects related to Amateur Radio, including

DXing and the introduction and promotion of Amateur Radio in underdeveloped countries. Visit the Yasme site at <http://www.yasme.org>.

U.S.A. Seeks a 5 Meg band

Meeting May 5 in Dallas, Texas, the ARRL Executive Committee reviewed a preliminary draft Petition for Rule Making seeking a new US ham band in the vicinity of 5 MHz. Experimental operation in that part of the spectrum under a license issued to the ARRL has been going on since 1999.

The Executive Committee agreed that the petition should seek a domestic secondary allocation around 5 MHz for the Amateur Service with a bandwidth of 150 kHz. Executive Committee members will review the completed draft petition before it's filed with the FCC, possibly before the next ARRL Board meeting in July.

Participants in the ARRL WA2XSX experimental operation on 5 MHz have established that an allocation at 5 MHz could improve emergency communication capabilities by filling the gap between 80 and 40 meters. An amateur allocation in the vicinity of 5 MHz long has been an objective of the International Amateur Radio Union.

Winning an allocation at 5 MHz—even on a domestic basis—could take several years. Securing an international allocation will be more difficult and take even longer. Consideration of an allocation at 5 MHz is not on the agenda for WRC-03 nor on the preliminary agenda for WRC-05/06.

Will CW ever die?

The ARRL News Letter referred to the former coast station KPH making a special event and endeavouring to contact the SS "Jeremiah O'Brien", KXCH, on 500 kHz. KPH sent a commemorative message and a traffic list. And it's only in the past couple of

years that these shore stations have hung up their keys. Now they want to resurrect the station, which goes to show history can relate to just two years ago!

Talking of marine radio. There was an interesting article on the Internet about Sea Captains having problems with GMDSS, which replaced the Radio Officer. Sea Captains are not electronic technicians and whereas everybody knew the ships 4 letter call sign, the ships GMDSS ident call in now 10 characters long. It's worse than trying to remember your credit card number! Safety at sea is just not the same with two human ears monitoring 500 kHz!

Talking CW. The lead feature in the RSGB June Rad. Com. was a talking Morse Code Reader. The PIC based project was developed by Jonathan Gudgeon, G4MDU. A couple of years ago Jonathan described a simple PIC Morse decoder that decoded the characters which were displayed on a two-line LCD module. There are some restrictions with speech and although you could read Morse up to 25 wpm there are a few character problems such as the letter 'E', it seems between 13 and 19 wpm seem to be best.

FMD

No it's not a new form of signal transmission but a tragic disease that has spread throughout much of Europe. Foot and Mouth Disease (FMD) has caused both a social and economic set back that has even reached our own Amateur Radio fraternity. The disease spreads easily among cloven-hoofed animals through air or direct contact with other animals and humans and can be picked up people, vehicles, vermin, etc.. Over two million cows and sheep have been slaughtered in Great Britain alone. The RSGB has cancelled the portable sections of all its contests as well as RDF events, rallies and even maintenance visits to remote repeater, beacon and packet sites. The RSGB is thinking of

changing their Field Day to September in the hope FMD will be clear by then. Although many other European countries are encouraging the same, the IARU Region 1 Field Day in early June seemed to be quite active.

Special Event Stations

Just happened to glance at the 41 Special Event Stations in the June QST. The things people celebrate! Perhaps we should be doing the same instead of complaining that Amateur Radio is declining in Australia. Let's get out there and tell it. Here are a few of the special events you may have found on the air during June.

"Elvis Presley Day
County Dairy Festival
Bread & Honey Festival
"D" Day Commemoration Day
National Trails Day
College World Sports
Kids Day
Cancer Society Day
Trout Rodeo & Free Fishing Day
RC Cola & Moon Pie Festival
Invention of the Wheat Harvester & Thresher
So, what are you celebrating this year?

A sad antenna story

A few years back a fellow amateur friend of mine died when he fell from his tower. We sometimes read of towers toppling over into power lines, but this event was with just a 2 metre ground plane. From the ARRL Newsletter.

A Kentucky Amateur Radio Emergency Service member died May 20 while installing a 2 metre antenna he'd just bought at the Dayton Hamvention. Ronald L. Oller, KG4JVT, of Irvington, died when the ground plane antenna he was installing fell onto the overhead electrical service line to his house. He had been a ham for about eight months.

So please, use caution when installing your antenna.

FINLAND – Towers of Power!

With WRTC-2002 taking place in Finland, during the next six months there will be a lot in the press about this most northerly country.

Located at 62 degrees North, Finland is within the auroral zone at roughly the same latitude as Anchorage, Alaska. Finnish hams seem to believe that by

hoisting their antennas higher and adding more elements they can close the "propagation gap" that exists between them and the rest of Europe.

In Finland, rotatable 140-foot towers are fairly common. Many Finnish hams are exposed to state-of-the-art technology in their employment as well—as they work for companies that are frontrunners in high-tech sectors. Nokia currently employs more than 10 percent of the ham population of Finland! But ultimately, the greatest factor that has contributed to the success of Amateur Radio in Finland is the unity of its ham population. While OH DXers and contesters compete head-to-head in many events, the following day they are back around the same table, sharing what they've learned and planning their next endeavours. (OH1EH ari.korhonen@kolumbus.fi)

WRTC-2002 is under the leadership of Organizing Committee Chairman Jouko Häyrynen, OH1RX. The Contest Club of Finland and the Finnish Amateur Radio League have agreed to jointly host WRTC 2002 from July 9 through July 16, 2002. The on-the-air operating portion of the event will be held in conjunction with the 2002 IARU HF World Championship on July 14 and 15. If you are interested in following this event details can be found at www.wrtc2002.org

Long-range cordless telephone sales

The ARRL has asked the FCC to investigate and "take appropriate action" against several companies it alleges have been marketing so-called "long-range cordless telephones" via the Internet. The ARRL took the action in the wake of an interference complaint and numerous reports from the amateur community about sales of the devices, some operating on amateur VHF and UHF frequencies.

ARRL General Counsel Chris Imlay, W3KD, said the League was seeking the FCC probe because the apparently uncertificated devices operate on amateur bands and are capable of interfering with amateur communication. He also noted that the devices are not likely to meet maximum permissible exposure levels for RF.

"ARRL has not been able to locate any FCC certification for these devices and, based on the advertised frequency bands

and ranges, it is believed that none of these devices could be certificated, or legally marketed or sold, under FCC rules," Imlay wrote. The League said some of the companies may be selling similar wireless products that may operate on amateur or restricted bands.

Imlay said the ARRL also is looking into the marketing of products such as 434-MHz video surveillance equipment and other "apparently non-certificated devices" that use amateur frequencies but are being marketed in the U.S. to non-amateurs.

The ARRL was able to obtain one of the long-distance cordless telephones for testing. The device, made in China and bearing no FCC identification number or label, operates near 147 MHz with an output power greater than 3 W. Other such phones are advertised as having ranges of up to 100 km operating at power levels of up to 35 W on VHF and UHF.

ARRL Lab Supervisor Ed Hare, W1RFL, said he's received at least one report of actual harmful interference from a long-range cordless telephone to amateur communication. The amateur reporting it tracked the telephone to the home of a neighbour, who said he'd bought the device on eBay.

Hare said some long-range devices are legally certificated to operate on the 900 MHz or 2450 MHz Part 15 bands. Hare invited reports of unlicensed devices causing actual harmful interference to Amateur Radio operation to rfl@arrl.org.

Has any reader had any experiences here in Australia with similar devices?

No problem with QRM

Source CQ-DL 5/01 (via VK4BDQ)
For over 30 years a competition has taken place in the southern part of Germany called "The Bavarian mountain day" or in German "Bayrischer Bergtag". The competition was created to get more activity and improve the design of portable equipment for higher frequencies. During the recent winter event (February 2001) one contact had been made using a frequency of 75 THz, or a wavelength of 630 nm. Homebrew equipment had been used, built by Hans H. Cuno, DL2CH. The signal was produced by a 5mw laser. Frequency modulation was used to modulate a 60 kHz AM sub carrier. The distance between both stations was 1.2 km and

after initial testing the power of the laser has been reduced to 1mw. However, one hurdle had to be overcome, how to line up the laser towards the RX. A telescopic sight solved the problem. This contact was not a world first, but proved that there is still some room for homebrew equipment in some areas before the appliance industry takes over. If you can read German and you are on the net, have a look at www.hhcuno.de

Your mobile rig, a problem for car manufacturer?

More and more cars, according to European car manufacturers are affected by the additional installation of electronic components and equipment. The German Amateur Radio Club DARC advised its members of possible problems caused by the installation and operation of amateur equipment in modern cars. Some electronic equipment, according to car manufacturers, can start engine immobiliser, and in more severe cases airbags, brake boosters, power steering, electronic gearboxes or motor management can be affected.

For this reason the German law requires a special written permission from the manufacturer, if you want to install additional electronic equipment in your car. This law is applicable for all vehicle registered after the 1/1/96. Without this permit you lose your insurance cover for the vehicle and the permission to drive on public roads.

Are we heading for similar problems? No problems here if you drive a good old Fairlane, Falcon, HQ or HZ.

The above compiled from a press release from the DARC (via VK4BDQ)

However, OZ1XB points out that automobile magazines are predicting that, within two years, many of the leading car manufacturers are planning to change the electrical system of their vehicles to a new standard of 42-VDC. The battery will be 36-V and they plan to use a DC/DC converter to 42-V. BMW, Ford, Mercedes and Renault say the first 42-V systems are due in 2003. We wonder what the manufacturers of Amateur equipment are considering. 36-V transceivers?

It's only 50 years ago since we changed from 6-V to 12-V. (From RSGB June Radcom).

Passing of the 'BIT' Man

Back in January we lost Bill Orr, W6SAI, the prolific antenna engineer. In February yet another great name passed on. Claude Shannon passed on at the age of 84. He may not be known to all but he was quite an important part of our electronic history. Claude was the eccentric mathematician and cryptographer who established the intellectual framework for the packaging and transmission of data. He originated the term 'bit' (binary digit). His classic 1948 paper "The Mathematical Theory of Communications" has become the *Magna Carta* of the communications age, both analogue and digital. At Bell Laboratories in WW II, as a young mathematician versed in Boolean algebra, he helped devise (along with Turing and Nyquist), the first unbreakable on-line speech coding system. Churchill and Roosevelt used it. In the UK the equipment consumed 30kW of power to produce a few milliwatts of audio.

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Moorabbin & District Radio Club

Radio on Rails stations work ZL

Radio on Rails took place in April, albeit with fewer train and tram mobile stations than previous years. However many memorable contacts were had, thanks to good propagation on 10 metres. This enabled stations as far afield as ZL and VK6 to work train mobile stations via the 10m/70cm VK3RHF repeater. Results for this contest are being compiled and will be available shortly.

AGM this month

The Annual General Meeting for the Moorabbin & District Radio Club will be held on Friday July 20, starting at 8:00pm. The venue will be the Combined Clubrooms, Turner Rd, and Highbett. Further information appeared

in APC magazine, which was sent to members last month. It won't be all business however; our guest speaker will be Tariq Hasnie from WinRadio.

Don't forget the net

With the end of daylight saving, the MDRC's Monday night net now includes 80 metres as well as two metres. Tune to 146.550 MHz from 7:30pm and 3.565 MHz LSB (+/- QRM) after 8:00pm for the 80 metre net. Net control is our station officer: Tony VK3CAT.

Membership fees now due

Just a reminder that all membership fees were due on the 30th June, payable on, or as soon as possible, following our AGM this month. Fees this year are \$30.00 full, \$25.00 concession. MDRC

membership is a low-cost way of supporting your fellow amateurs and making the hobby better for all. Further information showing how the MDRC derives its income and spends member funds appeared in pie charts published in April's APC Newsletter.

Should you have joined part way through the year your fees would probably have been pro-rated to June. Should you have any queries in this regard please contact Treasurer, Keith VK3JNB on 9551 7971

Peter Parker VK3VE

Publicity Officer

Moorabbin & District Radio Club

parkerp@alphalink.com.au

(03) 9569 6751

The Fox Finder

The fox finder is a 2 metre sniffer which was a club project for the Nashoba Valley Amateur Radio Club in the USA. The design was published in QST April 2001 by Bob Reif W1XP, Ralph Swick KD1SM, and Stan Pozerski KD1LE. The design is fairly simple and uses an audio voltage controlled oscillator to drive the headphones with a tone whose pitch is proportional to signal strength.

The design is shown in Fig 1. The Op Amp U1 provides feedback gain which compensates for non linearity in the detector diodes. The diodes D2 and D3 should be matched at low currents. The matching can be done with a low current

source and a digital voltmeter.

Op Amp U2 operates as a switched gain amplifier providing a range of suitable gain. The audio oscillator uses the common 555 chip which acts as a voltage controlled oscillator.

The components are relatively non critical. C1 is a small ceramic or film trimmer. L1 is 6 turns on 3/8 inch diameter spaced over 1 inch. The tap is at 1 turn. The wire size was given as No 20.

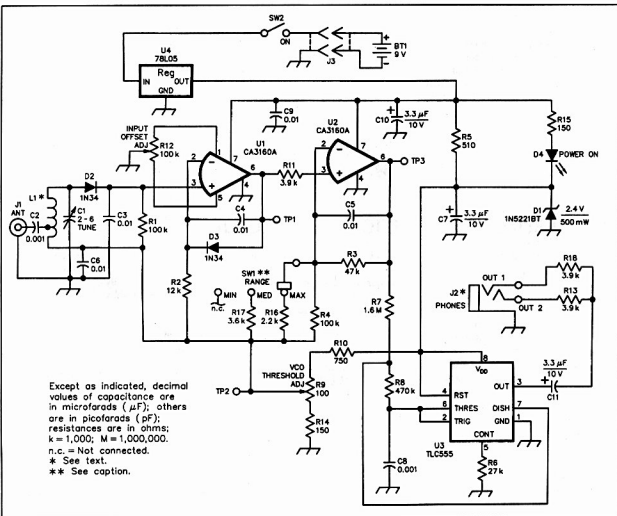


Fig 1. Fox Finder Sniffer Circuit. Note that one lug of the range switch SW1 is not connected.

Setting up the sniffer requires initial adjustment of R9 for 0.5 V at TP2. The range switch should be in the most sensitive position. Adjust R12 for TP1 to be 7 mV positive with respect to TP2. Then adjust R12 for TP3 50 mV positive with respect to TP2. This can be within 5 mV of the target 50 mV. C1

can now be peaked using a local signal and using the audio tone to peak for highest pitch. R9 may require adjustment during this peaking.

The 1N34 diodes can be matched for forward voltage drop using a 1M resistor in series with the diode across a 9V battery. Use a sensitive high input

impedance meter for this matching. Diodes within a few millivolts of each other should be selected. Watch out with the lighting as the light through the glass diode can have an effect.

The whole sniffer with a 9V battery can be housed in a small jiffy box.

Remote ATU

In difficult situations one may be forced to use a random length of wire which will lead to difficulties in achieving a match and in changing bands. A remote ATU is a way of achieving a match with reasonable efficiency. The feed line from the remote ATU can then be coax which can be routed as desired without excessive losses.




In his In Practice column in Rad Com December 2000 Ian White G3SEK presents some suitable ATU solutions for a base fed inverted L antenna which could even be at home in a town house yard. This antenna comes from the Backyard Antennas book of Peter Dodd G3LDO. The antenna is shown in Fig 2. The antenna is a 10m up vertical with a 10m horizontal top loading wire which is supported at the far end by the house. An extensive set of shallowly buried radials are used. The ATU is located at the base of the vertical section in the yard. This removes the need to bring the antenna wire hot with RF into the house.

The ATU used could be one of the automatic units available commercially but a simple remote switched preadjusted ATU would be suitable. One suitable design was presented by G3UCE in Radcom Feb 1989 and this is shown in Fig 3. This ATU is a modified parallel tuned circuit and only requires one relay per band. It may however be tricky to adjust.

Another design using an L network is shown in Fig 4. This design can be configured for a variety of matching requirements. A computer program is available to calculate the typical end feed impedance for a vertical or inverted L. The program ENDFEED.EXE is the work of G4FGQ and is available from the In Practice website. The In Practice website of G3SEK is at <http://www.ifwtech.com/g3sek>. Also available is the program SOLENOID EXE of G4FGQ which helps design the inductors.

Typical L network values are given in Table 1. These have been generated by the program of G4FGQ.

To comply with the new EMR rules you would need to restrict access to the

| L-networks: | | | |
|---|-----------------|-----------|------------|
|    | | | |
| Band, MHz | Network Options | C, pF | L, μ H |
| 3.5 | A | 700 | 1.1 |
| 7 | B C | 65 61 | 8.3 9.2 |
| 10 | B C | 73 120 | 2.1 1.8 |
| 14 | B C | 50 50 | 2.5 2.8 |
| 18 | B C | 60 90 | 0.9 1.0 |
| 21 | B C | 40 40 | 1.5 1.8 |
| 24 | B C | 35 55 | 0.8 0.7 |
| 28 | B C | 30 30 | 1.1 1.3 |

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Table 1. Typical L Network Values. These are suitable values for starting setting up

| Band metres | 160 | 80 | 40 | 30-10 |
|-------------------------|-------|-------|-------|-------|
| SSB with Compression | 700mm | 1m | 1.3m | 1.5m |
| CW | 600mm | 890mm | 1.1m | 1.3m |
| SSB without compression | 430mm | 630mm | 800mm | 920mm |

Table 2. EMR Distances for Inverted L with Remote ATU.

vicinity of the ATU and base of the vertical section. The end attached to the top of the house would be less of a problem but you would need to check clearances to people in the house and on any balcony.

The distances for a standard 100 W transceiver are shown in Table 2. These are for a standard 100 watt transceiver and 20 metres of RG58 coaxial cable feedline. For SSB with a 400 watt linear the SSB distances are doubled. The distances have been calculated from the ACA information with an allowance for the feed line.

Even in the confines of a small yard a fenced area around the bottom of the vertical and the ATU would not be too hard to provide. A garden bed with some shrubs would restrict access and would not look out of place. Similarly the distance to people in the house or on a balcony would not be hard to achieve.

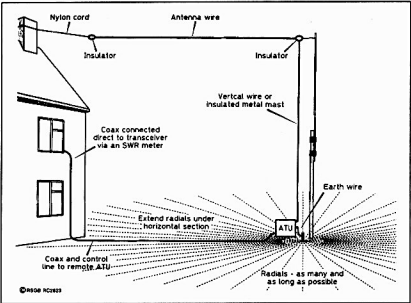


Fig 2. Base Fed Inverted L

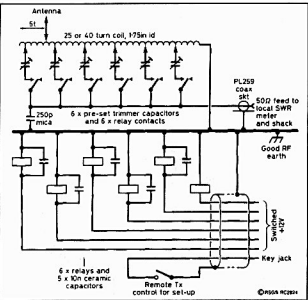


Fig 3. Remote Multi Band ATU by G3UCE

SWR Bridge Sensor

A different SWR bridge sensor was used in a power and VSWR meter described by Kees Heuvelman PA0CJH in Electron March 2001. The SWR bridge sensor was a four port design using two lines and two toroid transformers. The bridge should be easy to set up as there are no adjustments and it is a symmetrical arrangement. A fraction of the forward or reflected power appears at the two resistively terminated ports where it is measured. There is no finicky setup required as it is a bridge setup.

The circuit is shown in Fig 5. The layout is shown in Fig 6. The circuit is built into a small box which is divided

into two compartments. One line is terminated in two coaxial connectors and the other is terminated by 50 ohms

at each end. The resistors used for the 50 ohm terminations may be either parallel 100 ohm resistors or a parallel

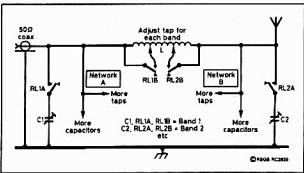


Fig 4. Manually Adjusted Remote Relay Switched L Network ATU

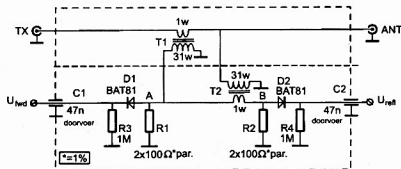


Fig 5. SWR Bridge Circuit.

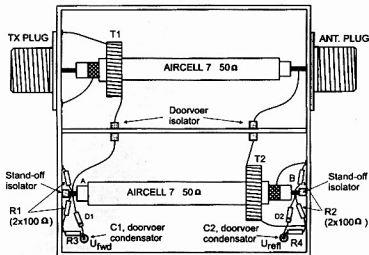


Fig 6. SWR Bridge Layout.

combination of three 150 ohm resistors. 1 watt resistors would be preferable to ensure that they are operated well within their ratings.

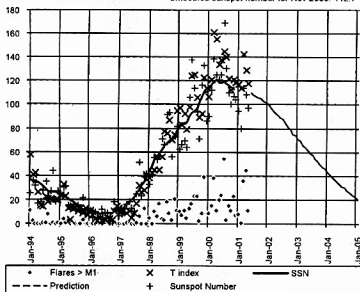
The toroids used were Amidon T68-2 wound with 31 turns of 0.2mm wire. The inside diameter of the toroids was 9.5 mm and the outside diameter was 17.5 mm. The toroids should be made of high permeability ferrite suitable for the frequency being used. The coax type given was AIRCELL 7 which would appear to be a thick 50 ohm coax which just fits through the wound toroids.

The box could be a diecast box divided with a partition or you could fabricate your own out of PCB laminate scraps, thin brass or tinplate. The metering circuit could be simply a meter and sensitivity pot or you could use a more complex circuit to give direct SWR readings and peak power.

ar

Sunspot Number

Monthly sunspot number for May 2001: 97.3
Smoothed sunspot number for Nov 2000: 112.7



Data provided by Ionospheric Prediction Service

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M 5100

\$114
SAVE \$41

Digitizer 2m 30W RF Power Amplifier

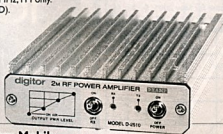
If you use your 2m band FM hand-held at home or in the car, but find that 2-3W RF output isn't enough for reliable communications, then this compact 30W RF amplifier may be the answer. It works with inputs from 0.5 to 5W and produces up to 30W output with just 3W input. A switchable 12-15dB gain low-noise GaAs FET receiver pre-amplifier can be selected for improved receiver performance on less sensitive hand-helds when being used in RF quiet areas. The amplifier offers a large heatsink for extended duty-cycle transmissions, fused DC power lead, and SO-239 input/output connectors.

Frequency range 144-148MHz, FM only.

Size: 100 x 36 x 175(WHDD).

D 2510

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FT-8100R 2m/70cm Mobile

The Yaesu FT-8100R is a state-of-the-art 2m/70cm band mobile transceiver that combines high power and a highly versatile memory system with an excellent wideband receiver and solid construction. Its UL MIL-STD-810 shock and vibration rating is your assurance of years of reliable operation. Includes hand mic, mounting bracket and fused DC power cord.

Features

- 198 memory channels
- 1200/9600 baud packet input socket
- Inbuilt antenna duplexer
- Inbuilt crossband repeater facility
- Dual receive capability (VHF/UHF/VHF/VHF UHF/UHF)
- Optional remoteable front panel

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430-450MHz Rx 110-550MHz,
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2 YEAR WARRANTY

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Features:

- Tx: 144-148MHz, Rx: 140-174MHz • RF Output: 5W with supplied 700mA/h NiCad pack
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D 3648

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- 50W RF output, with selectable 5, 10, or 25W lower power levels. The efficient PA stage only draws 8A at 13.8V DC for full RF power output.
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Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

Broadcast schedules All frequencies MHz. All times are local.

VK1 Division Australian Capital Territory
GPO Box 600, Canberra ACT 2601
President Gilbert Hughes
Secretary Peter Kloppenburg
Treasurer Ernest Hosking

VK1GH
VK1CPK
VK1LK

VK2 Division New South Wales
109 Wigram St, Parramatta NSW
(PO Box 1068, Parramatta 2124)
Office hours Mon-Fri 1100-1400
Phone 02 9689 2417
Web: <http://www.ozemail.com.au/~vk2w>
Freecall 1800 817 644
e-mail: vk2w@ozemail.com.au
Fax 02 9633 1525

President Terry Davies
Secretary Barry White
Treasurer Pat Leeper

VK2KDK
VK2AAB
VK2JPA

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
Phone 03 9885 9261
Web: <http://www.viawic.org.au>
Fax 03 9885 9289
e-mail: viawic@viawic.org.au
President Jim Linton
Secretary John Brown
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VK3PC
VK3JJB
VK3XV

VK4 Division Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 5377
e-mail: office@wagpower.com.au
Fax 07 3286 4929
Web: <http://www.wia.org.au/vk4>
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VK5 Division South Australia and Northern Territory
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web: <http://www.sant.wia.org.au>
e-mail: peter.reichert@bigpond.com
President David Minchin
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e-mail: vk6wa@inet.net.au
President Neil Penfold
Secretary Christine Bastin
Treasurer Bruce Hodland-Thomas

VK6NE
VK6ZLZ
VK6QO

VK7 Division Tasmania
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Phone 03 6234 3553 (BH)
Web: <http://www.tased.edu.au/tasonline/vk7wia>
also through <http://www.wis.org.au/vk7>
e-mail: batesjw@netspace.net.au
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VK7ZAX
VK7RT
VK7RT

VK1W: 3.590 LSB, 146.950 FM each Sunday evening from 8.30pm local time. The broadcast text is available on packet, on Internet www.iaa.amateur.misc news group, and on the VK1 Home Page <http://www.vk1.wia.ampr.org>

Annual Membership Fees. Full \$77.00 Pensioner or student \$70.00. Without Amateur Radio \$48.00

From VK2W1 1.845, 3.595, 7.146*, 10.125, 14.160, 24.950, 28.320, 29.120, 52.120, 52.525, 144.150, 147.000, 438.525, 1281.750 (* morning only) with relays to some of 18.120, 21.170, 584.750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday at 1000 and 1930. Highlights included in VK2AWX Newcastle news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup www.iaa.amateur.misc, and on packet radio.

Annual Membership Fees. Full \$78.00 Pensioner or student \$61.00. Without Amateur Radio \$47.00

VK3BW1 broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R) VK3RML 146.700, VK3RMM 147.250, VK3RWW 147.225, and 70 cm FM(R) VK3ROU 438.225, and VK3RMO 438.075. Major news under call VK3ZW1 on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full \$78.00 Pensioner or student \$61.00. Without Amateur Radio \$47.00

VK4WIA broadcasts on 1.825 MHz SSB, 3.605 MHz SSB, 7.118 MHz SSB, 10.135 MHz SSB, 14.342 MHz SSB, 21.175 MHz SSB, 28.400 MHz SSB, 29.660 MHz FM (rptr), 147.000 MHz, and 438.525 MHz (in the Brisbane region, and on regional VHF/UHF repeaters) at 0900 hrs K every Sunday morning. QNEWS is repeated Monday evenings, at 19.30 hrs K, on 3.605 MHz SSB and 147.000 MHz FM. On Sunday evenings, at 18.45 hrs K on 3.605SSB and 147.000 FM, a repeat of the previous week's edition of QNEWS is broadcast. Broadcast news in text form on packet is available under WIAQ@VKNET. QNEWS Text and real audio files available from the web site

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VK5W1: 1827 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.700 FM Mild north, 146.800 FM Mildura, 146.825 FM Barossa Valley, 146.900 FM South East, 146.925 FM Central North, 147.825 FM Gawler, 438.425 FM Barossa Valley, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide, (NT) 3.555 USB, 7.065 USB, 10.125 USB, 146.700 FM, 0900 hrs Sunday, 3.585 MHz and 146.675 MHz FM Adelaide, 1930 hrs Monday.

Annual Membership Fees. Full \$82.00 Pensioner or student \$68.00. Without Amateur Radio \$54.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.200 (R) Catlaby, 147.350 (R) Busseton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900, 147.000, 147.200, 147.250 and 147.350 MHz. Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full \$67.00 Pensioner or student \$61.00. Without Amateur Radio \$36.00

VK7W1: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full \$85.00 Pensioner or student \$72.00. Without Amateur Radio \$52.00

VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz).

VK1 Notes

Peter Kloppenburg VK1CPK

Forward Bias

It depends on which division you are a member of, but the fee for full membership of the ACT Division is \$77.00 per year. Every year all the Divisions are asked to review their membership fees. In some states they remain the same for many years. For example: The fee was \$70.00 in 1992. It became \$72.00 in 1996. Not bad considering changes in membership, increases in AR production cost, postage, and inflation. A significant increase by five dollars to \$77.00 occurred in 2000 to cover the cost of running the IARU conference in Darwin and other increases due to international obligations. All Divisions shared in these costs. This year the impact of the GST has increased our costs again and the Division is paying more for hiring

classes and meeting rooms, among others. It was therefore considered necessary to increment the fee by two dollars. A motion to this effect was put at the May, General Meeting. This motion was passed unanimously. The increase will take effect in June this year.

The ACT Division has developed a 13 page response to the ACA discussion paper entitled 'Amateur and Marine Operator's Examination and Certification Arrangements'. This Division is in favour of the WIA taking over this certification process completely. The ACA has indicated that it wants to minimise its involvement in the process and facilitate other organisations a greater role in the overall certification process. The 13 page response has been sent to the WIA

Secretariat, where it will be used to make up the final response to the ACA on June 22, 2001.

The General Meeting that was held in May went very well. One of the greatest advantages of the new venue is plenty of parking space right at the front door. Every member brought his or her own chair that evening. This will not be necessary for the July meeting, as by that time we will have bought sufficient stackable chairs to accommodate the members. Any member who wants to be kept up to date with progress achieved so far with renovating the hamshack facility should listen to the Sunday broadcast transmission at 8.30 pm. The next General Meeting will be held at the Scout Facility in Longenerong St. Farrer, on July 23, 2001 at 8.00 pm. Cheers.

VK2 Notes

by Pat Leeper VK2JPA

We finally managed to have a quorum for our AGM in May - having a lecture afterwards on IRLP helped! The lecture was given by Peter Illmayer, VK2YX and Andrew Lark VK2AFL of the Blue Mountains Amateur Radio Club and was very well received. Our thanks to Peter and Andrew for their presentation.

The list of VK2 office bearers for the year 2001-2002 is as follows: President: Terry Davies VK2KDK; Vice-President: Geoff McGrorey-Clark VK2EO; Secretary: Pat Leeper VK2JPA; Treasurer:

Chris Minahan VK2EJ; Affiliated Clubs: Ken Westernman VK2AGW; QSL Bureau: Geoff McGrorey-Clark VK2EO; NTAC: Brian Kelly VK2WBK; Trash & Treasure: John Turner VK2WRT; Deceased Estates Chairman: John Turner VK2WRT; Dural Officer: Chris Minahan VK2EJ; Education Officer: Andrew Scott VK2TWO; VK2 Notes: Pat Leeper VK2JPA; Bookshop: Barry White VK2AAB; Federal Councillor: Barry VK2AAB; Alternate Councillors: Terry

Davies VK2KDK and Geoff McGrorey-Clark VK2EO.

If you have any problems, these people can help you. Contact the office as advised on the Divisions page of AR and the matter will be referred to the appropriate officer, or dealt with at the monthly council meeting.

By the time you read this, the Conference of Clubs will have been held with much discussion, especially on the problem with some repeater sites. Further information next issue.

VK3 Notes

By Gary Furr VK3KKJ

WIA Victoria web site: www.wiavic.org.au e-mail: wiavic@wiavic.org.au

VK3 QSL Bureau

The QSL Bureau continues to be a popular membership service which is efficiently provided through a network of distribution points. However, a few individuals registered with the Bureau are not collecting their incoming cards, which are clogging the system. It causes storage problems for the volunteers who are part of the Bureau delivery system, and this is an unfair burden on them. QSL Bureau distribution points have

been reminded that they are not required to hold cards for longer than six months. If cards remain uncollected after this period, they will be returned to the VK3 Bureau with a request that the delinquent bureau user be removed from the distribution point list.

This action will be taken whether or not the user is a member of the club running the distribution point.

All bureau users are WIA Victoria members and are its responsibility if they

fail to meet their obligations in relation to the QSL Bureau. Distribution points are not required to follow up bureau users who fail to pick up their cards; the VK3 Bureau will attend this to.

RD Contest Kit available

WIA Victoria has again placed the popular RD Contest kit onto the web site, and copies are available from the WIA Victoria office, for this years Remembrance Day Contest to be held on the weekend on August 18th and 19th.

The kit includes full instructions and dupe sheets for VHF and HF, tally and log sheets, as well as a sample cover sheet, compiled in Microsoft word format. It is available for download from the link located on the main page. WIA Victoria acknowledges Geoff Hudson VK3VR for his contribution to WIA Victoria's RD Contest effort, including provision of this RD Contest kit.

Science Show update

At a recent planning meeting for the amateur station display stand at next month's Great Australian Science Show, a mock-up of the stand was created. Club representatives have been meeting regularly since April on the project. At their latest meeting they discussed the operation of the stand and the finer points of the static display and handout material. The stand is well placed in the Melbourne Exhibition Centre and Convention Centre, 2 Clarendon Street, Melbourne, in terms of access and passing traffic of show-goers. There is an option of also having a half-stand elsewhere in the centre that could enable a point-to-point communication ability, depending on available volunteers.

Full acknowledgment of all sponsors of the WIA Victoria stand will be made closer to the event, but so far they include Dick Smith Electronics, Icom Australia, Harris Communications, and the Shepparton and District Amateur Radio Club. Directly participating clubs

are: Eastern and Mountain District Radio Club : Gippsland Gate Radio and Electronics Club : Moorabbin District Radio Club : North East Radio Group : RAAF Williams ARC : Western and Northern Suburbs Amateur Radio Club.

The Great Australian Science Show on 23-26 August 2001 is to be visited by secondary school students from throughout Victoria, their teachers, parents, and the general public.

Entry to the GASS is free. It opens 9:30am to 5:30pm, (closing early on Sunday at 4:30 pm.).

WIA Victoria web site

Members who have not already registered for access to the Members Section of the web site, can do so online from the web site's main page. The site contains the latest member news, council information, monthly polls, archives of both member and news, online issues dating back two years. The popular e-classifieds, where members are able to advertise their unwanted goods is also accessible. Very soon WIA Victoria will be providing web space for members to upload their own personal home pages to their own personal directory within the WIA Victoria web site. The open or public section of the web site has averaged 900 hits a day over past months. There are many visitors from other countries who access the site regularly. Visitors from Mexico, Ireland, Singapore, Thailand, Ukraine and even

the US Government have all accessed the site over the past few months. The most popular pages continue to be news and Morse code watch.

Bookmarks

www.wiavic.org.au/news - Updated News

www.wiavic.org.au/mcw - Morse code watch

www.wiavic.org.au/edu - Education

Education On-line

Studying for an amateur licence, know someone interested in joining our hobby, or just wanting to put your knowledge to the test? The education pages are a good source for interactive trial exam papers for the Regulations Exam, and the Novice and AOCF Theory Examinations. You can sit the exams by clicking your mouse on the answer boxes for each multi-choice question, and when finished find out exactly how much you know about the regulations that govern the operation of amateur stations in Australia.

Visit the education page at www.wiavic.org.au/edu

The scouting movement has sought permission to use this material for JOTA and other radio and electronics events organised throughout the year by the Scout Radio and Electronics Unit.

The Education On-line is also popularly used as a link on a number of club web sites throughout Australia.

VK4 Notes—Qnews

by Alistair Elrick VK4MV

Pacific Mobile Net

A story in the Murrumbidgee Communications Group's newsletter highlights the activities of a 'local' Robbie VK4YV, in Maroochydore on the Sunshine Coast. Robbie, together with XYL Nancy started up the 14.313 MHz Pacific Mobile Net in the mid 70s in Pago Pago. Robbie was born a Dutchman in Indonesia and during WWII when in military service, was captured and spent years on railways in Thailand, then in a coalmine in Japan. After the war he returned to live on many Pacific Islands where, as we said the idea formed and he implemented the Pacific Mobile Net. You can check in to the net daily at 0200 UTC on 14.313 MHz.

APRS is Go

APRS particularly in South East

Queensland is growing in leaps and bounds with the existing WIDE AREA Digipeater, VK4DMI-3, high up at Ocean View and another VK4GO-3 to be established in the next few weeks on Mt Tamborine. To augment these and to cover some hidden areas a small number of Relay Only Digipeaters have or are being setup. It is hoped eventually to have a permanent Digipeater in the Ipswich area; the current one, VK4CPW-3 is only temporary, also it is hoped that others will eventuate in Toowoomba and in the Gympie and North Coast areas. The APRS network can and often is connected via an Igate to other similar networks mainly in VK although on occasions also around the globe. Satellite Gateways and HF APRS Digipeaters are not far away.

Queensland Digital Group

Repeater VK4RZB is back 'on air' on 438.475 MHz with 91.5 CTCSS access tone required. The QDG are trialing a Gasfet preamp and would appreciate any reports of successful use of the repeater. You can packet them at QDGC@VK4DGG. As regular listeners will know the VK4RZC Voice Repeater is operating, 438.125 MHz also with 91.5 Hz CTCSS access tone.

Sunshine Coast Digital

The Sunshine Coast BBS VK4WIS is to be moved to the new clubrooms and 3 sysops have been appointed. They are Ian VK4KIJ, Geoff VK4KEL and Len VK4ALF. The new clubrooms 'see' VK4RBU on 144.900 MHz for direct forwarding!

Radio Scouting

Newly appointed Queensland JOTA/JOTI Coordinator, Ross Tutin wants to contact Amateur Radio Operators who are currently uniform members of the Scout Movement. To contact Ross, you can phone him on mobile 0404 083 422 or email to rosstutin@bigpond.com (Ross Tutin, Queensland JOTA/JOTI Coordinator - Scouts Aust., Qld Branch). Information on all scout matters can be found at <http://jota.scouting.net.au>.

Don't forget the JOTA/JOTI on October 20 and 21, 2001!

A 6 metre BBS

Bruce VK4BOO announces that the BBS VK4BOO-1 on 53.100 MHz is now operational using 1200 baud as well as 2400 baud. Some 80 km north west of Brisbane the BBS is co-located with a 6 metre voice repeater, VK4RXD on 53.625/52.625 MHz. The AX25 frequency again, 53.100 MHz, 1200 and 2400 baud. It will be interesting to see some DX logins and where they will be from.

Science Kids on the Air

Amateur Radio recently played a part in a special event on Magnetic Island off the VK4 coast. As part of Education Week at Queensland schools, a special Science Activities week at Nelly Bay Primary School featured all arms of the sciences plus a live Ham demonstration by Ian VK4LMD, who carted his gear overseas by ferry and set up a station in one of the classrooms. Noel VK4BDV and Lyndall VK4MOP helped him out on the mainland.

Children were able to sample HF and VHF voice communications and were helped by many hams on the mainland to have their first contact on radio. A special contact happened on Tuesday May 22nd with David VK4KIX setting up a station with his music class at Heatley Primary School to talk to the children at Nelly Bay. As it turned out, the children on both sides of the ocean were about the same age and it wasn't long before the contacts sounded just

like a JOTA weekend. The questions asked included favourite foods, favourite sports, favourite TV shows and whether they were going out with someone or not (they seem to start early these days). Now that's the way to get AR out to the public!

QRP — absolutely.

When John Elliott VK5EMI took part in the VK-Trans-Tasman contest on May 5th, he made contact with David VK4KIX who asked John to wait until after the contest to test his new homebrew rig. The rig is a one transistor CW QRP unit, and puts out around 1.44 watts. John heard his CW easily, 549 from a vertical antenna, into his own G5RV on 80 metres.

As VK5EMI says, 'Now, I reckon that that's pretty darn good, and much more impressive than the achievements of the kilowatt boys!! David lives in Townsville, and I in Adelaide, a distance of around 1900 km as the RF crow flies.'

73s from Alistair

VK6 Notes

By Steve Ireland, VK6VZ

G'day from the VK6 Division. For the next year, as a new State councillor, I shall be writing this column about what is going with regard to WIA activities in the 'Golden State'.

One of the goals of the VK6 Division this year is to work towards bringing a real 'sea change' in Amateur Radio in WA - and in Australia in general. This can only come about by drastically increasing the numbers of radio amateurs - doubling our numbers would be nice! To this end, we are working on developing a proposal for an 'almost exam free' licence, which is aimed at attracting those people into the hobby who are interested in radio, but cannot spare the time to go regularly to evening classes to pass the current licence grades. The concept originally comes from Will McGhie, VK6UUU - great idea, Will - and has already received support from one member of the federal WIA executive. The 'almost exam free' licence would only require passing a simple one-day course on amateur radio, with emphasis on operating techniques, safety and upgrading the licence.

This licence would give us a pool of people who are interested in amateur radio, on the air in a simple fashion and who could be encouraged to further

develop their interests by means of educational/informational broadcasts from the WIA. The present idea is that the licencees would be allowed to use a 1MHz portion of 70cm - after all, we are definitely in a 'use it or lose it' situation with regard to this band - using 'type approved' equipment and FM, with a carrier power of 5W. We hope this licence will appeal to those

- (1) CBers who are fed up with the limitations of their hobby and would like to expand their horizons;
- (2) campers and caravanners who are interested in radio (I know quite a few!); and
- (3) some of today's 'techno-teenagers' (I was one 30 years ago...) who are bored with the Internet and want to do some real communication (mums and dads take note - think of how those mobile phone bills could drop!).

Surfing 70cm could just become all the rage. We have a number of challenges to overcome in getting the proposal up then to develop it fully and float the proposal as a postal motion to WIA Divisions/Federal council. We need to interest at least one manufacturer in producing the 'type approved' equipment needed and, last but not least, get the Australian

Communications Authority to agree to the idea.

For those of you out there who are thinking this sounds pretty radical stuff, it is - but we need to be radical if we are to survive. Actually, there have been a pretty forward-thinking lot of councillors in the WA Division for some time - who actually floated a similar idea three years ago, but which unfortunately apparently received little support or discussion within the WIA. However, things seem to have changed since then in the WIA as regards openness to new ideas. As well as looking to new members, the VK6 Division is also moving to reward its pre-war licenced members and those who have held licences for 50 years and over. Members who fall into this category will receive nice looking Certificates of Recognition, to acknowledge their achievement, in the near future.

By the time you read this, the second 40m/2m VK6 Division on-air meeting will have been held (on Sunday 17 June, straight after NewsWest). For those who missed it and would like to find when the next one will occur, please visit the VK6 Division's web site at: <http://www.vk6wia.org>

73 until next time! Steve, VK6VZ

DX Notes

Ross Christie, VK3WAC
19 Browns Road, Montrose 3765, Vic.
Email Vk3wac@aol.com

Now that the Northern Hemisphere is heading into its warmer summer months there will be more and more DX activity taking place, and of course, this will mean new DXpeditions as well. Special event stations commemorating all sorts of anniversaries, events etc are also beginning to appear on the bands (see below).

Meanwhile, back in VK, the DX doesn't seem to have been too bad for some. Hans Kiesinger, L40370, has been doing some listening on the bands and managed to log VQ9AS on SSB and VQ9IO, 8J4XPO, 8J0ITU/0 on 20 metres CW, while on 15m he managed TA2DS, ZC4BS and 5X1Z all on CW. Not a bad haul given Hans' restricted options for erecting antennas at his QTH. Keep it up Hans! I managed to get some time in on air myself and managed to work V73 and CU3DJ on SSB, TF1DX, XV3T/WP4F and HK1RRL on CW on 20m, Z34A on 15m CW and TA4EB on 10m CW, so I am quite happy.

There has been a fair amount of comment on air and in the amateur press, here and overseas, regarding the state of the current sunspot cycle. I must admit that propagation has not been as good as expected, at least at my QTH anyway. Europe and the USA have been having some good openings on 10, 12 and 15 metres but 20 has been a bit disappointing for some reason. The 6m band has also been open around Europe recently. On the 23rd of May my father logged 9A8A, ON4AN, ON5FU, I2SIB, IN9SPU, OZ9HB, YU1SSP, DL1QW, DH3RQ and F5LRL using an Icom R75 and a simple vertical antenna mounted on his verandah. The band opened suddenly during the day and closed around 19:30z that evening. His QTH is about 20km west of Glasgow and shadowed by hills to his east so his list is quite impressive for his location and equipment. We in VK are relatively isolated from other countries whose amateurs are active on 6m, but we should be able to manage more QSOs with JA, ZL, HL, YB, 9M etc than we are currently experiencing. Maybe we are all

checking the bands for activity by having a quick listen across them; perhaps we should call CQ rather than simply listening. After all, if we all just listen without transmitting, no one will hear anyone.

The DX

9A, Croatia. 9A/S50IPA/p, 9A/S53IPA/p and 9A/S57AX/p will be on the air using CW and SSB from Kolocep Island (EU-016, CT-038) for the 'Islands of Croatia Award'. Activity will be on 20, 15, 10 and 6 metres (40 and 80 metres may also be used). Dates are from 25th of June until the 7th of July. QSL to S57AX via the S5 Bureau. [TNX S57AX and 425 DX news]

C5S, Portugal. Hermann, HB9CRV/CT3FN, Antonio, CT1EPV and Luis, CT1AGF will be participating in the IOTA Contest this year as C5SC from Culatra Island (EU-145). [TNX The Daily DX and 425 DX News]

HR, Colombia. Mark, W4CK, has plans to be on the air as HR1/W4CK. He will be operating CW only during his trip. Dates are from the 19th until the 26th of July. [TNX The Daily DX]

J28VS, Djibouti. Stephane is currently active on all bands from Djibouti. He will be there until June 2002. He has placed his logs on the internet and they can be viewed at <http://www.qsl.net/f4dbf/> and QSL cards should be sent via the following route, Sebastien Le Gall, F4DBF, 10 rue Roger Salengro, 29480 Le Relecq Kerhuon, France. [TNX F4DBF and 425 DX News]

J49R, Crete. Bob, I2WIJ, has let us know that he will be active from Crete from the 23rd of July until the 6th of August. He also has plans to participate in the 2001 IOTA Contest using the callsign J49R. He will enter as a 24H CW 100w DXpedition entry. Bob will also be on the air outside of the IOTA contest using SSB including the WARC bands. He is also hoping to erect a dipole for 160m, though he realises that propagation conditions in July may not be at their best for this band. [TNX OPDX]

JW, Svalbard. Pierre, ON7PC, and

Fred, ON6QR, have plans to be active from the JW5E station in Longyearbyen (EU-026), Svalbard on the 28th and 29th of July during the IOTA Contest. QSL via LA5NM. [TNX ON6QR and 425 DX News]

KG4, Guantanamo Bay. Tip, N4SIA, says that he will be active as KG4AS from the 3rd to the 10th of July but gives no details as to which bands and modes he will use. QSL to N4SIA. [TNX N4SIA and OPDX]

OJ0, Finland. Seppo, OH1VR, Timo, OH1NX, Jaakko, OH1TX, Lasse, OH0R, Massy, JH1ARJ, Yo, JP1NWZ, Jun, JH4RHF and Hiro, JR4PMX will operate from Market Reef (EU-053) on the 12th to the 16th of July. They will be running three separate stations on all bands 160 to 6 metres. Modes will be SSB, CW, RTTY and possibly SSTV. The group plans to be active as OJ0/home call (QSL the individual operators via their home call) and will participate in the IARU HF World Championship on the 14th and 15th of July as OJ0U (QSL for this call is via JP1NWZ). For further information on this operation you can contact Jun at jh4rh@ar1.net [TNX JH4RHF and 425 DX News]

P2, Papua New Guinea. Ron, VK3IO, will be active as P23IO from Papua New Guinea between the 18th of May until the 22nd of August 2001. QSL via VK3IO direct or via the Buro. [TNX The Daily DX]

PJ2, Netherlands Antilles. G6YB, G3RFX, G3TKF, G3XSV, G4FKA, G4HFX, G0WKW, M0AXF and M0WLF of the Bristol Contest Group will be active as PJ2/homecall from Curacao (SA-006). Operation will be SSB and CW on all HF bands from the 19th until the 31st of July. The group will also participate in the IOTA contest as PJ2Y. QSL PJ2Y via G3SWH and the others via their home calls. [TNX G3XSV and 425 DX News]

SV9, Crete. Roberto, I2WIJ, will on the air as J49R from Crete (EU-015) between the 23rd of July and the 6th of August. Roberto will also operate in the IOTA Contest (24H CW section). He will also

be on the air outside of the contest on SSB and the WARC bands. QSL is via home call, either direct or through the ARI bureau. [TNX I2WIJ and 425 DX News]

XU, Cambodia. A small group of German operators will be active from Cambodia from the 15th of July until the 3rd of August. The first 4 days of operation will take place on the higher HF bands from Siem Reap (Angkor Wat). An all band (160 – 6 metres) period of activity will follow from Sihanoukville with an emphasis on the lower bands. Modes will be SSB and CW with some RTTY and PSK31 a possibility. At this time, only one operator's callsign has been confirmed and that is Frank/DL4KQ's who will be using XU7ABR. QSL via DL4KQ. Those needing Cambodia on any bands or modes should pay a visit to their web page at <http://www.DL4KQ.de/> [TNX OPDX]

IOTA Activity

There are quite a few stations/activities listed above who should be under the IOTA heading, however, as long as their details are published does it really matter. IOTA chasers should mark their calendar for this years IOTA contest which will be held on the 28th and 29th of July. This contest now attracts more than 1000 participants so it should be possible to work the 100 different IOTA stations required for the basic award during the 24 hour period of the contest. Full details on the event can be found at the following web site <http://www.g4tsh.demon.co.uk/HFCC/IOTA.htm>.

Special Events

Special Event. The special event station 3Z0GI to be active from the 10th of June until the 30th of July. The operation is to celebrate the 666th anniversary of the city of Warsaw. Activity will take place on most HF bands, SSB and CW. QSL via SP4CUF. [TNX OPDX]

Russian Mountain DXpedition. Oleg, UA9UAX, has provided some details of a very interesting and 'ground breaking' event! Oleg says that operators Vladimir, EY8HB, EY8AV, Nodir, EY8MM and a group of mountaineers are planning to operate from one of the anonymous mountains on the Pamirs (near Sarez Lake) on the 3rd of July. They will be active for ONE hour only (so be quick and concise with your exchange!) from

the peak which is about 5800-5900m above sea level. Modes will be SSB only on 40 or 20 metres on an IC-706MK2G. Apparently the mountain is as yet unnamed but after the expedition is complete the peak will be christened "Radio Amateur's Peak"! [TNX UA9UAX and OPDX]

CF2/CG2/VC2, Canada (Special Prefixes). During the celebrations for the 50th anniversary of the founding of the "Radioamateurs du Quebec, Inc." (RAQI) Canadians have been granted permission from the authorities for all VA2/VE2s to use these special commemorative prefixes. As from the 15th of June until the 15th of July all holders of VE2 prefixes may use the special prefix CG2, and holders of VA2 prefixes may use the special prefix CF2. Daniel A. Lamoureux, VE2KA (the president of the RAQI) also reports that they have obtained permission from Industry Canada to use another special callsign for use during the same period, this callsign is VC2A. This callsign is available for use by individuals or groups. Lookout for this callsign especially during contests etc. [TNX OPDX]

Italian Islands Trophy. This trophy is sponsored by the 'Crazy DX Group' and is open to licenced amateurs as well as SWLs. It is awarded for working or activating IIA (Italian Islands Award) and ILIA (Italian Lake Islands Award) islands between the 1st of June and the 30th of September 2001. Further information and details of the award are available via e-mail to crazydxgroup@libero.it or crazy@crazydxgroup.com; there is also a web site for the Crazy DX Group at <http://www.crazydxgroup.com> [TNX 425 DX News]

Another special event station is OZ2OOL. This station is celebrating the organisations 70th anniversary. It will be in operation all through this year. All QSO's and SWL reports will be issued with a special numbered QSL card. QSL is via bureau or direct to OZ2OOL, Post Box 351, DK-8900 Randers, Denmark. [TNX The Daily DX]

Special event station IQ8MFC will be active on CW, SSB, RTTY, PSK and SSTV until the 31st of July to celebrate the centenary of Marconi's First transatlantic Contact between Great Britain and Newfoundland on the 12th of December 1901. A special QSL is

available via IZ8AJQ either direct to Erminio Cioffi di Michele, Piazza Umberto I 16, 84036 Sala Consilina - SA, Italy or through the bureau. [TNX IZ8AJQ and 425 DX News]

Dxpeditions

A group of Quebec Amateur Radio operators have announced they will be active from QRV from Zone 2 (CQ WAZ) during July. Zone 2 is one of the more difficult ones to work due to the fact that there are very few operators in this zone. The team will begin operations on the 21st of July and end on the 24th of July. The callsign will be VE2A. Their operating location will be approximately 350 kilometres north of Chicoutimi. Operators will include Sylvie, VE2SYK, Yves, VE2YVT, Tvon, VE2YAT, Jean-Yves, VE2PS, Camille, VE2SO, Yvan, VE2BA and Yvon, VE2TG. They plan to be active on 10, 15, 20, 40 and 80 metres on CW and SSB. Some suggested frequencies to try are: CW - 3505, 7005, 14005, 21005 and 28195, while for SSB try 3795 (outside the VK allocation), 7095, 14295, 21195 and 28495. The equipment list will include a total of 4 rigs and 2 amplifiers. Their web site can be found at <http://www.ve2dsb.com/ve2a/> [TNX The Daily DX]

TX - The Oceania DX Group is planning a DXpedition to the Chesterfield Islands for later this year, possibly in September. The group plan to have five stations on air from 160 to 6 metres using CW, SSB and RTTY. Bill Horner, VK4FW, is organising the DXpedition and is looking for operators; he can be contacted via Email at vk4fw@spiderweb.com.au [TNX QRZ-DX and 425 DX News]

Round up

Lighthouse Activity. The Nieuwpoort Lighthouse (BEL-004) will be activated for the very first time during the coming "Lighthouse-Lightship" weekend running over the weekend of the 18th and 19th of August. The operators will be ON4ADN, ON4CJ, ON5FP, ON6HH, ON1DPX and some perhaps some other operators if the bug bites. The group has been granted permission to use the special callsign OS4LHN. Activity will take place on all bands from 80 – 10 metres, mainly on SSB and CW. QSL cards go to ON4AND either direct or through the UBA bureau. The QSL card for the event will be a multi-colour

special issue. If you send a QSL direct it will be replied to from Nieuwpoort and will bear the special "Nieuwpoort Lighthouse" postmark. This postmark is considered as a real collector's item. QSL Manager is Geert, ON4AND and he states that he only needs reply postage, your address but no envelope.

3C, Equatorial Guinea. Martin, 3C5J, is very active from the oil platform off the coast of Equatorial Guinea. He is especially busy on 15 and 20 metres on CW and SSB. Comments are going around that although everyone is thankful that he is active and doing a great job, but he would make a lot of people happy if Martin could get to the mainland for a few days so a contact would count for DXCC. Some people are just never content! Martin seems to be mainly active around 1300 to 1630z and again between 0530 and 0830z. QSL via MW0BRO. [TNX OPDX]

SP, Poland. The special event callsign SN45KDU will be on the air until the 31st of May and again on the 1st till the 18th of November. The station is operated by SP9KDU and is to celebrate the 45th anniversary of the Radio Club in Tarnowskie Gory, Poland. QSL via bureau to SP9KDU. [TNX SQ9BEU]

QSLing D68C. Don, G3XTT is letting everyone know that the QSL cards for the recent D68C operation are being printed in Germany. They should arrive with Phil, G3SWH in late May. The cards will be a 'high quality 4 sided card, which will look good in everyone's QSL collection' and according to Don will look great in anyone's collection. Phil expects to get stuck into the QSL work after he arrives home from his trip to the Maldives, where he will be operating as 8Q7WH, over the period of the 4th till the 11th of June. Don also asks that it be remembered that QSL cards go to G3SWH and SWL cards should go to BRS 32525 (Bob Treacher, 93 Elibank Rd,

Eltham, London SE9 1QJ, England). [TNX G3XTT and 425 DX News]

An interesting snippet for all you 'salty' types appeared in OPDX, contributed by the RSGB. A 'special activity on LF' operation took place on the 16th of May. I know, I know, it's a bit late now but you would not have heard them anyway, read on. The RSGB LF Group reported "Listeners may be aware that the UK Royal Navy are celebrating the Centenary of the Royal Navy Submarine service with a gathering of UK and overseas submarines at the Faslane submarine base in the Clyde. This year is also the 75th anniversary of operation of the GBR transmitter (Rugby) which operates on a frequency of 75kHz. As part of this celebration "it is hoped" that a special A1A [much easier to pronounce than 100HN0AAN, the new emission designation for CW, isn't it?] Morse code transmission from the GBR long wave transmitter will be made. For those with an interest in VLF reception please listen to 16kHz, yes 16kHz not 60kHz! on Tuesday, May 29th, 2001, at 1200 GMT and 1345 GMT." It would be interesting to know just how far the transmissions from GBR reached using this frequency while utilizing a 'professional' VLF antenna installation?

A free award from EM, Ukraine. The Ukrainian Amateur Radio League (UARL) will have a station active in the IARU HF World Championship during the 14th and 15th of July from the UARL Headquarters. The station will be using the special callsign EM0HQ. The HQ station's site (UR4MZL) is in Lisichansk City and the team's leader is Vladimir, UX2MM. The QSL Manager is Shevchenko Alexander, UR5EAW. They are hoping to hit the World record (good luck to them) The free award is available for working this station with "NO APPLICATION" to fill out. The rules for qualifying for the UARL's "Ukraine

2000" award are simple (1) Work EM0HQ during the World Championship, (2) for DX stations - 2 QSOs any mode, (3) for European stations - 4 QSOs any mode. The award application is the log of EM0HQ. The award is free and is sent through the bureau. This information was supplied by Alexander, UR5EAW, QSL Manager for EM0HQ. For any questions, send Email to the following Email address em0hq@qsl.net [TNX UR5EAW and OPDX]

P5, North Korea. Just in case you think you got lucky last month, a station signing P5DX was having himself a real good time with many individuals chasing him/her on the 40, 20 and 15 metre bands on CW. Save your time and green stamps on this one, he is definitely a pirate! [TNX OPDX]

And another one. Tom, 3W7CW, has confirmed that his callsign has been recently used by a PIRATE, for example on May 19th, 2001 on 18073 kHz, starting around 2200z. Tom has been QRT for the past few weeks due to his relocation from Hanoi to Saigon. He says his antennas will be ready at his new QTH around September or October. After he moves to his new location Tom will change his prefix from 3W7 to 3W5. So, after this look out for him as 3W5CW. [TNX 3W7CW and OPDX]

Sources

Again we should thank the following people and organisations for the information in this months DX Notes. Thanks to: L40370, L30902, S57AX, HB9CRV/CT3FN, F4DBF, W4CK, ON6QR, N4SIA, JH4RHF, VK3IO, G3XSV, I2WIJ, DL4KQ, UA9UAX, VE2KA, OZ2OOI, IZ8AJQ, VE2DSB, VK4FW, ON4AND, MW0BRO, SQ9BEU, G3XTT, UR5EAW, QRZ-DX Mag, 425 DX News, OPDX, RSGB and The Daily DX

ar.

Amateur Radio Publicity

How many of you saw the February 6th 2001 issue of the *Bulletin*?

It is well worth a read. We got a two page spread in a high profile magazine and it showed Amateur Radio in a very good light.

It would be great if we could exploit a few more of these opportunities. How about seeing if you can exploit a local

event to highlight our existence. Some local problem where we were able to help.

Some local event we, as Amateurs, helped make viable by offering our services. WIGEN communications at canoeing, cycling and running

marathons. Communications for horse and car trials. These can all be exploited to show we can provide a community service in time of community troubles.

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An update of Amateur Radio Satellites

This information is included in the column twice yearly for archival purposes and to assist those who do not have Internet access. The amateur satellite field is very volatile and information rapidly ages. I encourage all amateurs with internet access to visit the AMSAT web site www.amsat.org and follow the various links for the latest information particularly regarding new launches or satellites currently undergoing commissioning. I am loath to include too many URLs in the column as they seem to change without notice and I simply don't have the time to check them all out regularly. So therefore with the above caveats, here goes. The information below has been gleaned from various AMSAT publishing sources and is current at the time of writing.

Phase 3D/AMSAT OSCAR 40/AO-40

Launched: November 16, 2000 aboard an Ariane 5 launcher from Kourou, French Guiana.

Status: S-Band transmitter is active. The RUDAK system has also been activated on an experimental basis. Attitude changes are underway in preparation for the activation of the arc-jet thruster to raise the perigee of AO-40. The situation regarding the status of AO-40 is changing almost on a daily basis as the commissioning process continues. For Internet users, up to date information is available on the AMSAT web site and day-to-day happenings can be followed by subscribing to the AMSAT-BB bulletin board or the AMSAT-ANS news service. The web site has information on subscribing to these services.

International Space Station/ARISS

Worldwide packet uplink: 145.990 MHz

Region 1 voice uplink: 145.200 MHz

Region 2/3 voice uplink: 144.490 MHz

Worldwide downlink: 145.800 MHz

TNC callsign is temporarily set to NOCALL

ARISS (Amateur Radio aboard the International Space Station) initial station launched September 2000 aboard shuttle Atlantis. ARISS is made up of delegates from major national Amateur Radio organizations.

Status: Operational. Voice contacts with ISS have been made recently.

The ISS packet station is available for UI packets (APRS or UI QSL).

The mailbox and keyboard are currently disabled.

U.S. callsign: NA1SS

Russian callsigns: RS0ISS, RZ3DZR

Radio Sport RS-12

Uplink 145.910 to 145.950 MHz CW/SSB

Downlink 29.410 to 29.450 MHz CW/SSB

Beacon 29.408 MHz

Launched: February 5, 1991 aboard a Russian Cosmos C launcher

Status: RS-12 was re-activated in mode A on January 1, 2001

The latest information on RS-12 and RS-13 can be found on the AC5DK RS-12/13 Satellite Operators page at: <http://www.qsl.net/ac5dk/rs1213/rs1213.htm>

Radio Sport RS-15

Uplink 145.858 to 145.898 MHz CW/SSB

Downlink 29.354 to 29.394 MHz CW/SSB

Beacon 29.352 MHz (intermittent)

Launched: December 26, 1994 from the Baikonur Cosmodrome

Status: Semi-operational, mode-A, using a 2 metre uplink and a 10 metre downlink. Dave, WB6LLO, has operating information for both RS-15 on his web site.

<http://home.san.rr.com/doguimont/uploads>

Oscar 10 AO-10

Uplink 435.030 to 435.180 MHz CW/LSB

Downlink 145.975 to 145.825 MHz CW/USB

Beacon 145.810 MHz (unmodulated carrier)

Launched: June 16, 1983 by an Ariane launcher from Kourou, French Guiana.

Status: Semi-operational, mode-B. AO-10 has been locked into a 70-cm uplink and a 2 metre downlink for several years. DX continues to be heard and worked on AO-10. W4SM has more information about the satellite at the following URL: <http://www.cstone.net/~w4sm/AO-10.html>

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000UTC with early check-ins at 0945UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900UTC with early check-ins at 0845UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
GPO Box 2141, Adelaide, SA.
5001.

Graham's email address is: vk5agr@amsat.org

Amrad AO-27

Uplink 145.850 MHz FM
Downlink 436.795 MHz FM
Launched: September 26, 1993 by an Ariane launcher from Kourou, French Guiana
Status: Operational, mode J. AO-27 is currently not switched on when over VK/ZL.

UO-14

Uplink 145.975 MHz FM
Downlink 435.070 MHz FM
Launched: January 22, 1990 by an Ariane launcher from Kourou, French Guiana.
Status: Operational, mode J Tim, KG8OC, features UO-14 information on the Michigan AMSAT web site <http://www.qsl.net/kg8oc>

JAS-1b FO-20

Uplink 145.90 to 146.00 MHz CW/LSB
Downlink 435.80 to 435.90 MHz CW/USB
Launched: February 07, 1990 by an H1 launcher from the Tanegashima Space Center in Japan.
Status: Operational.
FO-20 is in mode JA continuously Tak, JA2PKI, reported FO-20 control station operators believe that the UVC (Under Voltage Controller) now is regulating the transponder. The UVC monitors battery voltage and tries to protect the batteries from over discharge.

JAS-2 FO-29

Launched: August 17, 1996, by an H-2 launcher from the Tanegashima Space Center in Japan. Status: Operational
Voice/CW Mode JA
Uplink 145.90 to 146.00 MHz CW/LSB
Downlink 435.80 to 435.90 MHz CW/USB

Digital Mode JD

Uplink 145.850 145.870 145.910 MHz FM
Downlink 435.910 MHz 1200-baud BPSK or 9600-baud FSK
Callsign 8J1JCS
Digitalizer 435.910 MHz
Mineo, JE9PEL, has a FO-29 satellite telemetry analysis program that will automatically analyze all digital telemetry from the satellite (such as current, voltage and

temperature). The JE9PEL FO-29/ shareware is available at the following URL: <http://www.ne.jp/asahi/hamradio/je9pel/>

Tiungsat-1

Uplink 145.850 or 145.925 MHz 9600-baud FSK
Downlink 437.325 MHz
Broadcast callsign MYSAT3-11
BBS MYSAT3-12
Launched: September 26, 2000 aboard a converted Soviet ballistic missile from the Baikonur Cosmodrome.
Status: Operational at 38k4-baud FSK with the restriction that the power budget is sometimes overloaded by the 8 watt transmitter and under these circumstances the satellite will not respond to switch-on commands.
For more information on TiungSat-1, visit the following URL: http://www.yellowpages.com.my/tiungsat/tiung_main.htm

Kitsat KO-25

Uplink 145.980 MHz FM (9600-baud FSK)
Downlink 436.500 MHz FM
Broadcast Callsign HL02-11
BBS HL02-12
Launched: September 26, 1993 by an Ariane launcher from Kourou, French Guiana.
Status: Operational.

UOSAT UO-22

Uplink 145.900 or 145.975 MHz FM 9600-baud FSK
Downlink 435.120 MHz FM
Broadcast Callsign UOSAT5-11
BBS UOSAT5-12
Launched: July 17, 1991 by an Ariane launcher from Kourou, French Guiana.
Status: Operational with very heavy individual and Satgate traffic.
More information on the satellite is available at the Surrey Satellite Technology website: <http://www.sssl.co.uk/>
This site is well worth a look for heaps of information on all satellites from the University of Surrey stable.

Oscar-11

Downlink 145.825 MHz FM (1200-baud AFSK)
Mode-S Beacon 2401.500 MHz

Launched: March 1, 1984 by a Delta-Thor rocket from Vandenberg Air Force Base in California. Status: Operational, telemetry downlink only.

More information on OSCAR-11 is available at the following URL: <http://www.users.zetnet.co.uk/clive/>

Pacsat AO-16

Uplink 145.90 145.92 145.94 145.96 MHz FM (using 1200-baud Manchester FSK)
Downlink 437.025 MHz SSB (RC-BPSK 1200-baud PSK)
Mode-S Beacon 2401.1428 MHz
Broadcast Callsign: PACSAT-11
BBS PACSAT-12
Launched: January 22, 1990 by an Ariane launcher from Kourou, French Guiana.
Status: Semi-operational, the digipeater command is on. A new Whole-Orbit-Data collection of current graphics along with general information and telemetry samples can be found at: www.telecab.es/personales/ea1bcu

UoSAT-12 UO-36

Uplink 145.960 MHz (9600-baud FSK)
Downlink 437.025 MHz 437.400 MHz
Broadcast Callsign UO121-11
BBS Callsign UO121-12
Launched: April 21, 1999 by a Russian launcher from the Baikonur Cosmodrome.
Status: Operational. UO-36 carries a number of imaging payloads, digital store-and-forward communications and mode L/S transponders. NASA showed interest in this satellite when they demonstrated on UO-36 the ability to use standard Internet protocols to communicate with an orbiting spacecraft (just like any node on the Internet). To my knowledge full BBS operations have never been turned on, uplinking being restricted to commanding the transmitter on and requesting image file downloads. Neither has the L/S transponder been made available for amateur use. The VK5HI image viewer shareware for UO-36 is available on the AMSAT-NA web site at the following URL: <http://ftp.amsat.org/amsat/software/>

win32/display/ccddsp97-119.zip

Further information on UO-36 is available from: <http://www.sstl.co.uk/>

ITAMSAT IO-26

Uplink 145.875 145.900 145.925
145.950 MHz FM (1200-baud)

Downlink 435.822 MHz SSB

Broadcast Callsign ITMSAT-11

BBS ITMSAT-12

Launched: September 26, 1993 by an Ariane launcher from Kourou, French Guiana.

Status: Semi-operational, the digipeater function is on and open for APRS users.

TMSAT-1 TO-31

Uplink 145.925 MHz (9600-baud FSK)
Downlink 436.925 MHz (9600-baud FSK)

Broadcast Callsign: TMSAT1-11

BBS TMSAT1-12

Launched: July 10, 1998 by a Zenit rocket from the Baikonur Cosmodrome.

Status: Part operational. The TO-31 downlink will be off over most areas, with the exception of Europe and Thailand. This is required to allow control stations to recharge the battery with minimum power drain. ProcMail V2.00G has been released by G7UPN. This software permits the processing of image files from TO-31. It has been posted to the AMSAT-NA FTP site at the following URL: <http://www.amsat.org/amsat/software/wins32/wisp>

Many of the high-resolution color images transmitted by TMSAT are compressed using a UoSAT compression format. This format is supported by the VK5HI CCD display program.

Lusat LO-19

Uplink 145.84 145.86 145.88 145.90 MHz FM (using 1200-baud Manchester FSK)

CW downlink 437.125 MHz

Digital downlink 437.150 MHz SSB (RC-BPSK 1200-baud PSK)

Broadcast Callsign LUSAT-11

BBS LUSAT-12

Launched: January 22, 1990 by an Ariane launcher from Kourou,

French Guiana.

Status: Beacon only. The CW beacon is sending eight telemetry channels and one status channel on 437.126 MHz. No BBS service is available. The digipeater is not active. Mineo, JE9PEL, has recorded LO-19 CW and PSK telemetry and placed the information on his Internet homepage site at: <http://www.ne.jp/asahi/hamradio/je9pel/>

General information and telemetry samples can be found at: www.telecable.es/personales/ea1bcu

SO-41 Saudisat-1A

Uplink to be released

Downlink 437.075 MHz

Broadcast Callsign SASAT1-11

BBS SASAT1-12

Launched: September 26, 2000 aboard a converted Soviet ballistic missile from the Baikonur Cosmodrome.

Status: Unknown, this satellite has been in orbit for almost 8 months. ANS has received no additional information. When/if operational, SaudiSat-1A will operate as 9600-baud digital store-and-forward systems as well as analog FM repeater mode capability. One of two new ham satellites from the Kingdom of Saudi Arabia built by the Space Research Institute at the King Abdulaziz City for Science and Technology.

SO-42 Saudisat-1B

Uplink to be released

Downlink 436.775 MHz

Broadcast Callsign SASAT2-11

BBS SASAT2-12

Launched: September 26, 2000 aboard a converted Soviet ballistic missile from the Baikonur Cosmodrome.

Status: Similar to SAUDISAT-1A above.

Radio Sport RS-13

Uplink 121.260 to 21.300 MHz CW/SSB

Downlink 145.860 to 145.900 MHz CW/SSB

Beacon 145.860 MHz

Launched: February 5, 1991 aboard a Russian Cosmos C launcher

Status: non-operational (last operational in mode-T)

The latest information on RS-12 and RS-13 can be found on the

AC5DK RS-12/13 Satellite Operators page at: <http://www.qsl.net/ac5dk/rs1213/rs1213.html>

Kitsat KO-23

Uplink 145.900 MHz FM (9600-baud FSK)

Downlink 435.170 MHz FM

Broadcast Callsign HLO1-11

BBS HLO1-12

Launched: August 10, 1992 by an Ariane launcher from Kourou, French Guiana.

Status: Intermittent operation with the downlink transmitter operating at unpredictable intervals. No activity has been monitored here at VK3JT for several months. It looks like we have lost KO-23 which was the best of all the 9600 baud satellites for many years. Its wide footprint, sensitive receiver and strong downlink initiated many operators into the world of digital satellites. Its mailbox was the busiest of all with on-board memory being pushed to the limit and commonly upwards of 10-15 stations being observed in the PB queue. A great satellite in a great orbit. Congratulations to Surrey and the Korean control team.

Transponder Operations Begin on AO-40

AO-40 experimental transponder operation started on May 05, 2001 when the U-band and L1-band uplinks were connected to the S-2 transmitter passband downlink via the Matrix switch. At the time of writing, transponder operation has been suspended as preparations are being made for arcjet testing. See "Perigee-Raising" below for more details. As part of this whole exercise it is also planned to test the U-band and V-band transmitters again when squint angles allow good visibility. During the transponder tests many operators reported good contacts when squint angles were favourable. Remember that at present AO-40 is still spin-stabilised and therefore squint angles vary considerably during a pass. Later in the commissioning program the 3-axis stabilisation will be tested and if this works as expected AO-40's antenna arrays will remain earth-pointing at all

times. This translates into optimum squint angles for all stations and should result in the best possible signals both up and down. Perigee passes will bring about the worst case squints but even with this restriction, 3-axis stabilisation represents the best possible compromise for all stations at all times during the orbit.

Progress Towards Perigee Raising of AO-40

I was off the air for all but the first few days of May and only returned to the birds towards the end of the first week in June. It seems a lot has happened while I was away. I just missed out on the opening of the mode S transponder by a day or so and on returning I find the signals from AO-40 had been severely affected by very high squint angles. As I write this the transponder operations have been temporarily suspended. It seems that the program to fire the perigee-raising motor has begun. Now here is an excellent example of "input from the ranks". Early in May

someone asked on the AMSAT-BB whether strange markings on some of the YACE camera shots could have been caused by sun-burning of the CCD chip during re-orientation operations. This caused a minor stir in the guru circles but James Miller, in his usual style, did some calculations and proved it was not possible for that to have happened during any of the attitude changes so far. It did bring the idea to mind though that such a thing could possibly happen during future attitude changes. Steps were then taken to work around such a situation. The perigee raising operation requires that a specific attitude be attained before it can be done and the required attitude change is being conducted in two separate phases, as I write this column. By doing the attitude change in this way it will ensure that the camera never faces anywhere near into the Sun. CCD cameras do not have shutters in the usual sense. The lens is open all the time and data is fed to memory as required as "exposures" are made. It's worthwhile noting that the

SCOPE cameras are mounted close by the YACE camera and share the same pointing attitude so what works for one, works for all. Avoidance of this situation will be factored in to all future attitude changes. When the required attitude is reached all will be ready for the operation of the arc-jet thruster, which is hoped to raise the perigee of AO-40 to approximately 500 km. It has been decided that it will not be necessary to ignite the arc-jet thruster in order to make this perigee height change. Instead the ammonia propellant will simply be vented without ignition. It is hoped to raise the perigee to a satisfactory height with a far greater degree of safety than a fully ignited but shorter motor burn. The results of this operation should be available by next issue. In the meantime visit the AMSAT-NA web site or subscribe to the AMSAT-BB or the AMSAT-ANS news service for the very latest information regarding AO-40 commissioning operations.

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Wrong URL

In a previous article about Tesla Coils I wrongly gave the web address for pictures of my Tesla Coil. Thanks to those of you who let me know. The correct Web address is <http://members.iinet.net.au/~will2/tesla.html>. This page contains several colour pictures of high voltage lightning.

IRLP

IRLP is an abbreviation you hear from time to time on various voice repeaters, and for the casual user of voice repeaters you may know little about IRLP. The abbreviation stands for Internet Radio Linking Project and is the result of many hours of development by David Cameron VE7LTD in Canada. David has an extensive web site with all the information you require to learn about IRLP and it can be found at : www.irlp.net. For those of you without web access a little about IRLP.

David looked at earlier systems to link

voice repeaters via the Internet and found them wanting, so a completely new hardware and software system developed and was called IRLP. The operating software uses LINUX and audio streaming software Speak Freely. The hardware provides the interface between the computer and amateur radio, either directly to a voice repeater or via a radio link to a voice repeater.

The end result sure does sound good. Users can link their local repeater to another voice repeater similarly equipped with IRLP anywhere in the World using DTMF commands. Voice confirmation lets you know when the link is established and if there is no activity the link times out with voice identification after about one minute.

One of David's aims was to overcome the delays inherent in earlier systems and this has been achieved with good voice quality. You could well hear amateurs from all over the World popping up on your local repeater.

It is interesting to speculate that IRLP and systems like it could well be the preferred method of linking repeaters even over short distances rather than via a UHF link, simply because it is easier and cheaper. Even sites that are in remote locations could be linked via a mix of UHF links to an Internet connection. Cost may appear higher using IRLP due to the need of a permanent Internet connection, but there are many hidden costs in setting up dedicated UHF links to existing voice repeaters. And the more equipment that is installed at remote locations the more potential for breakdown resulting in expensive and at times frustrating site visits requiring further visits, when the very part you require to fix the problem was not thought of or left behind.

As mentioned earlier, have a look at David's web site for detail about IRLP. There sure are some clever amateurs out there combining amateur radio, computers and the Internet.

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Contest Calendar July – September 2001

| | | | | |
|------|-------|--------------------------------|----------|-----------|
| July | 1 | RAC Canada Day Contest | (CW/SSB) | |
| July | 7/8 | Internet 6m Contest | (CW/SSB) | |
| July | 14/15 | IARU HF World Championship | (CW/SSB) | (July 01) |
| July | 21 | Pacific 160 Metres Contest | (CW/SSB) | (May 01) |
| July | 21/22 | SEANET Contest | (CW) | |
| July | 28 | Waitakere Sprint | (SSB) | (June 01) |
| July | 28/29 | Russian RTTY WW Contest | | |
| July | 28/29 | IOTA Contest | (CW/SSB) | (July 01) |
| Aug | 4 | Waitakere Sprint | (CW) | (June 01) |
| Aug | 4 | European HF Championship | (CW/SSB) | |
| Aug | 4/5 | Ten-Ten Summer QSO Party | (SSB) | |
| Aug | 5 | YO DX Contest | (CW/SSB) | |
| Aug | 11/12 | Worked All Europe DX Contest | (CW) | (July 01) |
| Aug | 18/19 | Remembrance Day Contest | (All) | (June 01) |
| Aug | 18/19 | Keymen's Club of Japan Contest | (CW) | (July 01) |
| Aug | 25/26 | ALARA Contest | (CW/SSB) | (May 01) |
| Sep | 1 | CCCC PSK31 Contest | | |
| Sep | 1-2 | All Asian DX Contest | | |

Worked All Europe DX Contest

CW: 11/12 August

SSB: 8/9 September

RTTY: 10/11 November

0000z Sat - 2400z Sun

Object is to work European stations (except in the RTTY section where anyone works anyone). Bands are 80 - 10 m. In the contest, avoid 3550-3800 and 14060 - 14350 kHz on CW and 3650 - 3700, 14100 - 14125 and 14300 - 14350 kHz on SSB. The minimum time of operation on a band is 15 minutes, although bands may be changed within this period if, and only if, the station worked is a new multiplier.

Categories are single operator all bands; multi-operator single transmitter; and SWL all bands. DX cluster support is allowed. A maximum of 36 hours is allowed for single operator stations, with up to three rest periods (mark them in the log).

Exchange RS(T) plus serial number.

Additional points can be gained reporting QTCs as follows: after working a number of European stations, details of those QSOs (ie QTCs) can be reported during a current QSO with a European station. In the CW and phone sections, QTCs are sent from non-European stations to European stations. In the RTTY section, QTCs can be sent to any station, including non-Europeans, outside one's own WAC continent. A QTC contains the time, callsign and QSO number of the station being reported, eg: "1307/DA1AA/431" means you worked DA1AA at 1307z and received serial number 431. Commence QTC traffic by sending the QTC series and number of QSOs to be reported, eg "QTC 3/7" indicates that this is the third series and that seven QSOs will be reported. A QSO may be reported

only once and not back to the originating station, who can be worked more than once to complete the quota. Only the original QSO, however, will have points value.

Multiplier on each band equals the number of European countries worked on that band (or on RTTY only, the number of DXCC/WAE countries), times a band factor. The band factors are four for 80 m, three for 40 m and two for 20/15/10 m. Add the band multipliers together and multiply by the sum of (QSOs + QTCs) to obtain the final score.

SWLs may log each station heard, European and non-European, once per band.

Logs may be by logging program, or on DOS disc, providing a paper summary is included.

Send logs by mail to: WAEDC Contest Committee, Box 1126, D-74370 Sersheim, Germany. Logs may be

sent by e-mail to: <wae@dc@arc.de>
Deadlines are 13 Sept (CW), 14 Oct (SSB) and 13 Dec (RTTY).

European countries are: C3 CT1 CU DL EA EA6 EI EM/N/O ER ES EU/V/W/F/G CD CI GJ GM GM(Shetland) GU GW HA HB HB0 HV I IS IT JW(Bear) JW(Spitbergen) JX LA LX LY LZ OE OH OH0 OJ OK/L OM ON OY OZ PA R1/FJL R1/MVI R/U(RUSSIA) RA2 S5 SM SP SV SV5(Rhodes) SV9(Crete) SV(Mt Athos) T7 T9 TA1 TF TK UR-UZ(Ukraine) YL YO YU Z3 ZA ZB2 1A0 3A 4U(Geneva) 4U(Vienna) 9A 9H.

Keyman's Club of Japan

18/19 August, 1200z

Sat - 1200z Sun

This contest is designed for CW enthusiasts and will particularly suit those who are collecting Japanese prefectures for awards. The only category is single operator multi-band.

Suggested frequencies: 1908 - 1912 (split); 3510-3525; 7010 - 7030; 14959 - 14090; 21050 - 21090; 28050 - 28090 kHz.

Exchange: RST plus continent code (OC). JAs will send RST plus district code.

Score one point per QSO.

Multiplier on each band is the total number of JA districts (max 62 per band).

Final Score is total points X total multiplier. Show duplicate QSOs with zero points.

Attach **summary sheet** showing usual information and

send logs to: Yasuo Taneda JA1DD, 279 - 233 Mori, Sambu Town, Sambu, Chiba 389-12, Japan, postmarked no later than 14 September, 2001. ASCII logs on DOS disc most welcome.

IARU HF Championship

14/15 July

1200z Sat to 1200z Sun

Bands: 160-10m (no WARC).

Categories: Single Operator, CW only, phone only, mixed; Multi-operator single transmitter mixed mode only. Single-operator stations must remain on a band for at least 10 minutes at a time (exception: IARU member society HQ stations may operate simultaneously on more than one band with one transmitter on each band/mode, providing only one HQ callsign per band is used).XX

Exchange: RS(T) and ITU zone (P2=51, VK4/8=55, VK6=58 and VK1/2/3/5/7=59). HQ stations will send RS(T) and official society abbreviation.

Score one point for QSOs within own zone or with an HQ station; three points for QSOs with a different zone in own continent; five points for QSOs with different continents.

Multiplier is total ITU zones plus IARU HQ stations worked on each band.

Final score is total QSO points from all bands X sum of multipliers from each band. Include a dupe sheet for 500+ QSOs.

Send logs postmarked by 6 August to: IARU HQ, Box 310905, Newington, CT 06131-0905, USA. Official forms and an ITU zone/prefix/continent map can be obtained from the same address on receipt of a large SASE with two IRCs or equivalent.

Certificates to the top scorers in each category, in each state, ITU zone and DXCC country. Also, stations with 250+ QSOs or 50+ multipliers will receive achievement awards.

RSGB Islands On The Air Contest

28 - 29 July

1200z Sat-1200z Sun

This contest is intended to promote contacts between qualifying IOTA island groups and the rest of the world and to encourage expeditions to IOTA islands. Sections are: IOTA Island Stations (ie those with an IOTA reference); World and SWL. You can enter as CW only, SSB only, or mixed mode.

Single operator stations can enter as unlimited (no time limit), or limited (12 hours max, with off periods at least 60 minutes long and marked in the log).

Bands: 80 - 10 m, avoiding 3.56-3.60, 3.65-3.70, 14.06-14.125 and 14.30-14.35 MHz.

Exchange: RS(T) plus serial number, plus IOTA reference number if applicable. Stations can be contacted on both Phone and CW on each band. Use the same serial numbering system for both modes.

Score: 15 points per QSO with an IOTA station (including UK); five points for stations in another DXCC country; and two points per QSO with one's own country or IOTA reference.

Multiplier equals the total IOTA references per mode per band, added together.

Final score is total QSO points X total multiplier.

For each band (but not each mode), submit a separate log, multiplier list and dupe sheet.

Send your log and summary sheet to: RSGB IOTA Contest, PO Box 9, Potters Bar, Herts EN6 3RH, postmarked no later than 25 August. A comprehensive range of awards is offered to the leading stations in each category, section & continent.

RESULTS: 2001 Inaugural VK/ trans-Tasman Contest

| | | | | |
|--|--|---------------|--|---------------|
| • 2001 VK/trans-Tasman Trophy (overall Winner): VK3EW | | | | David McAulay |
| Division 1, (Single Operator - Phone): | | | | |
| • 1 st Certificate | (score 2158) | VK3EW | David McAulay | |
| • 2 nd " | (score 2066 - Club S'n) | VK5SR | South East Radio Group | |
| • 3 rd " | (score 2036) | VK2AKJ | Jim Patrick | |
| • 4 th " | (score 1879) | ZL1BVK | Alex Learmond | |
| Division 2, (Single Operator - QRP Phone): | | | | |
| • Certificate | (score 534) | VK3LK | Adrian Hatherley | |
| Division 3, (Stationary Mobile): | | | | |
| • Certificate | (score 909) | VK4YN | Eric Fittock (VK4NEF) & Bill Homer (VK4FW) | |
| Division 4, (Single Operator - CW): | | | | |
| • 1 st Certificate | (score 576) | VK5NJ | John Nieuwenhuizen | |
| • 2 nd " | (score 528) | VK3VP | Ian Godsil | |
| • 3 rd " | (score 455) | ZL2RX | Roger Wincer | |
| Certificate | (Highest VK score 2158) | VK3EW | David McAulay | |
| " | (Highest ZL score 1879) | ZL1BVK | Alex Learmond | |
| " | ("Night-owl's" Award - Top score, last hour, 317) | | | |
| " | | VK2AKJ | Jim Patrick | |
| " | ("Wooden Spoon" Award - Lowest score submitted, 3) | | | |
| " | | VK2JCN | Chris Newton | |

BBC World Service dropping short wave broadcasts to Australasia and North America

The head of the BBC World Service, Mark Byford, stunned the short-wave community in early May when he announced that they were axing short-wave broadcasts directed to the Pacific and North American audiences. He arrogantly stated that if people wanted to continue listening to the BBC World Services they could find it on the Internet or via rebroadcasts via local AM or FM affiliates.

This unilateral decision clearly antagonized the millions who still rely on the short-wave signals and there was an immediate backlash, especially in North America. As many of the loyal listeners pointed out, the affiliate program of getting the BBC World Service available on local FM stations is not working to their satisfaction. Stations slot the "Beeb" in the wee small hours when the listening audience is at its lowest, which is not convenient to the majority of the listeners. Reception also appears to be mainly in the major cities. Also local stations mainly concentrate on the news output and do not broadcast other WS programming. This arrangement is often at the whim of the local rebroadcaster, who often reschedules other programming.

It was also pointed out that the number of people, who can at the same time log on to the BBC via the Internet, could be measured in the thousands and not the millions who can hear transmissions simultaneously via radio. As one respondent on "Write On" the listener feedback program stated "I do not use a computer to listen to the BBC, but a radio. I cannot carry a computer around with me about the house or in the garden or in the car."

The BBC seems to be immune to the outcry that has arisen and protests have now been directed to the Foreign and Commonwealth Office in Whitehall, which is responsible for funding for the BBC external services. This also took them by surprise, judging by the reaction

of consular staff and other diplomatic personnel, after receiving angry mail and protests.

Frequencies due to be axed on June 30th here in Australia are 11955 kHz from 0500 to 0900, 9580 from 0600 to 0800, 9740 from 2000 to 2200 UTC. Also relays from Brandon (QLD) from 2300 to 2400 UTC on 12080 and 9660 have been axed. It quickly became apparent that the Pacific Islands were going to miss out as the Internet is not an option nor are local rebroadcasts generally available, so some frequencies would be remaining. These may also be audible here.

Transmissions to SE Asia are heard here but as the antennas are not directed to this region, signal levels may be down. Signals to Europe around 0500 come in well as always especially 9410 and 12095 kHz. It is rather odd that the "Beeb" has not made use of the 13 MHz allocation except for Arabic

Broadcasts. Also the 21 MHz band does not seem to carry as much as they did in previous years. I am personally surprised that the powerhouse on 25650 kHz has not been reactivated as that gave a strong signal in our evening hours. True the latter channel was very good at the solar peak and also may have emanated from the discontinued Daventry site yet it covered quite a slice of the Globe.

Radio Canada International is another casualty

At the same time, Canada's external services also made a drastic cutback in their output, which has seen weekend programming being pre-recorded without any news broadcasts as well as foreign language programs being reduced to 30 minutes. Also weekend programs are to be repeated during the week as filler in hour-long broadcasts. The reason why RCI apparently took this step is because the BBC will no longer

be requiring the Sackville relay facilities to broadcast to North America. RCI uses Merlin facilities in the UK to broadcast to Europe and Africa as part of this transmitter-sharing scheme.

This will not affect us, as Montreal has not targeted this region for some time.

This decision also upset listeners, but unlike the BBC, it mainly upset Canadians who listen to it. RCI does not have a large audience, compared to the BBC World Service and mostly Canuck expatriates. While protests over the Bush House cutbacks have come from overseas, protests over RCI's abrupt cutbacks have come from domestic Canadians.

Radio Australia resumes from Darwin

In mid-May, Radio Australia resumed broadcasting from the Cox Peninsula site, off Darwin. It has been 5 years since the Darwin relay was unavailable due to budgetary constraints. The loss of the Darwin facility made a huge dent to the penetration of RA into Asia. Darwin was leased out to a British evangelical radio ministry "Christian Voice" which already broadcasts from Zambia and Chile on short wave. Test transmissions have already commenced from the Darwin facility and a recent agreement was signed allowing a satellite feed from the CV headquarters in the English Midlands to Darwin via Cyprus.

RA via CV Darwin has been heard here at 0000 on 21680 in Indonesian. The same site was heard 17775 in English from 0000. I do not have the whole schedule of RA transmissions from Darwin handy. 21680, I know has also been carrying CV in English but I think there has to be a break so listeners will not be confused.

Australia's other international broadcast licensee, HCBJ, will be in the Kimberley region of WA and may be operational within six months with a

100 kW sender. Incidentally Quito is putting very good signals on 17660 at 2300 UTC in English targeting India, Burma and Thailand. I presume that once the Australian facilities are operational, the broadcasts will cease.

Prominent HF site closed

The Spanish site of US backed Radio Free Europe/ Radio Liberty, near Barcelona, was closed on the 27th of May after almost 50 continuous years of operation. This site was primarily targeting Eastern Europe and the Soviet Union. With the end of the Cold War, the domestic media scene altered

dramatically and RFE/RL programs began to be heard via local FM rebroadcasts. Other European sites have also been closed or downgraded. RFE/RL is continuing from Prague with new languages and regions being covered. Radio Free Asia, also a part of the International Broadcasting Bureau yet is based in Washington DC.

Yugoslavia back on Short Wave

Belgrade has resumed broadcasting on short wave after a nine-month hiatus. The difficulty has been that the

transmitters are based in Bosnia - Herzegovina, which is no longer part of the Yugoslavian Federation. Now the hurdles have been overcome, Belgrade can now be easily heard here at 2200 UTC on 7230 kHz in English, Sunday through Fridays. Saturdays sees an extended Serbian transmission. Serbian programs follow the English release.

I am reliably informed that the deal will also see Sarajevo also use the facilities.

Well that is all for this month. Until next time, the very best of 73- Robin L. Harwood.

ar

Radio Amateurs Old Timers Club Australia

Can you help?

This item is about Kingsley AR7 radios and their use by the Australian Army. The famous Kingsley AR7 receiver was originally designed for and widely used by the RAAF. The model used by the Air Force with its strong stainless steel front panel is widely known. Less widely known is the version of the AR7 made especially for Australian Army Signals. There were two versions of this. One had the same bright steel face but it was housed in a horizontal steel box with two coil boxes on small shelves on either side. It was accompanied by a Kingsley SC/DC power pack also in a smaller horizontal steel box with three leads coming out from the bottom front right corner. A small engraved plate bolted to the front panel of the receiver reads, 'Communication Receiver No 1'.

The Army Signals Museum at the vast Simpson Barracks in Melbourne's north-eastern suburbs has one of these—without the power pack—courtesy of one of our members in Bunbury, Western Australia and is very grateful for this.

The alternative Army Signals version of the AR7 also known as Communications Receiver No 1 together with its power supply came in steel boxes as already described BUT the front panel of the receiver had a black enamel finish and the famous dial was also black with the 50 graduations around its perimeter raised above the surface and brass in colour. The calibration charts on the coil boxes were also brass in colour. It was used by various Army Signal Units, including

the then top secret Special Wireless Section which was established earlier in World War 2 than the Air Force's famous Eavesdroppers.

Now we come to the meat in the sandwich.

Can any of you find for the Signals Museum one of these black sets—in any condition, together with or separate from a matching Army AR7 power supply—and no, we are not getting confused with the famous HRO or the AMR100 made by AWA. There must be a couple of them about somewhere.

If you can help please call me on 03 9570 4610 or write to me at my call box address.

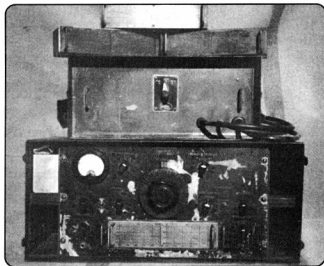
The black AR7/Communications

Receiver No 1 would look very much at home in the mock up of an Army Signal Station in the Western Desert complete with dummy operators in desert uniform.

The museum has its own separate building at the Simpson Barracks and is usually open for visitors Tuesdays between 10am and 3pm. The entrance to Simpson Barracks is on Blamey Road on the eastern side of Greensborough Road, Melway Reference 20, D7. The museum is located left of the far end of Blamey Road. Its phone number is 03 9450 7874

Allan Doble VK3AMD

President,
Radio Amateurs Old Timers Club of
Australia



Black AR7. Photo courtesy Michael Bush



Ham Shack Computers

Alan Gibbs, VK6PG
223 Crooms Street, NORANDA WA 6062
Email: vk6pg@tpg.com.au

Part 4

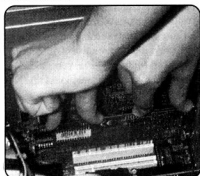
Networking

Making Connections

Some RA's use more than one computer in the ham shack or around the house. Just like a small business, it makes good sense to connect them together. By doing so, productivity increases and it avoids costly duplication of peripherals like printers and modems etc. One cost-effective way to do this is by purchasing a network kit with all the parts, cables, software and instructions. Networking kits (DSE XH7259) cost about \$75 with two 10Mbit RJ45 cards and one Category 5 crossover cable (DSE XH3223).

Networking is easy with modern MS Plug-and-Play technology under MS Windows 98 or higher. All that's needed is a Phillips screwdriver and about one-hour of spare time for two computers.

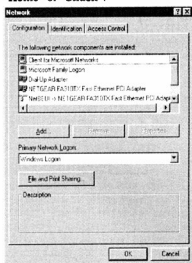
Clear a table making a working platform, remove the computer cover and locate a spare card slot on the motherboard.



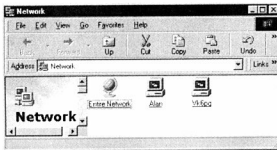
Remove the spare metal blanking plate adjacent to the slot and carefully plug in a network kit card. Screw on the metal faceplate and replace the computer cover. Repeat the process on your second computer and reconnect the computers and switch them on. Windows should recognise your "new hardware" and will configure your network card by allocating computer resources.

Connect the Category 5 crossover cable between both computer cards. On

the first computer, go to Start, Control Panel, Network Properties and Open. Add NetBEUI for your network card. If Windows recognised the card, "click" the Identification tab and give your computer a "Name" say "Callsign". Next, allocate a name for your "Workgroup" - this might be called "Home" or "Shack".



Lastly, select Access Control and check the box for shared access between the computers on your new network. Repeat this process for your second computer, but allocate a different computer name like "Office". For the workgroup name, use the same name as for the first computer (EG: "Home" or "Shack").



But now comes the "exciting bit"! Return to the MS Windows desktop and "click" the "Network Neighborhood" Icon. Two new icons should now be visible in the window. "Clicking" on alternate icons will reveal the disk and file structure for each computer in turn.

Networking

From either computer, your new network connection can now:

1. interchange files and software.
2. backup for data files etc.
3. run programs.
4. print, scan and much more.

For a more detailed background and/or in cases of difficulty - see 3 below.

Example

"Office" has just downloaded a Logging program from the Internet. The file is over 2Mb and won't fit on a floppy disk! To transfer the file, "click" on the file then "copy". Next - open the network icon and open the "Callsign" computer. Select the C:\drive, then Programs. Make a new folder for the software called "Logging", open the folder and paste the downloaded file into the folder. Easy!

Transfer is happening at 10,000,000 bits-per-second (10Mb/sec) - a far cry from the dribbling speed of floppies, CD-ROM's, removable disks or the Internet!

Three, four or more computers can be added to a network by using a common "hub" connected in a "star" network. The installation process is the same but cables must be standard Cat 5 without crossover connections.

Transceiver Control

Modern transceivers use electronic control in the production testing routine. A data connection is usually available on the rear panel to connect

specialised equipment and "testing" computers. These connections use TTL (Transistor, Transistor Logic) language and require conversion to RS232 computer serial port language for control and operation with a personal computer in the shack.

Icom-Ten Tec-Yaesu Control

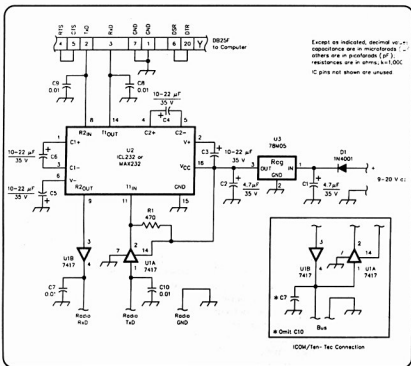
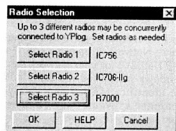
Icom and Ten Tec each manufacture a RS232/TTL Level Converter called the CI-V. This connects between the transceiver data port and a spare communications port on the back of the computer. The basic circuit (courtesy of the ARRL 2) is shown below for Yaesu equipment like the FT1000MP etc.

regulated supply from the shack transceiver +12V regulated DC power supply (DSE D3800).

D1 is the protection diode in case the external 12V is connected in reverse!

Example for Icom Users

YPlog (see part 3) allows control of up to three Icom radios. These might be:



The smaller inset circuit diagram shows the circuit modifications for Icom and Ten Tec transceivers or receivers.

Home Construction

A small aluminum diecast box (DSE H2221), one 25-way female connector (DSE S2691) and all the components including the RS232/TTL converter chip (1) shown on the above circuit are available from Dick Smith Electronics. Construction can easily be done on Versa board (DSE H5614) using DIL sockets for U1 and U2. U3 provides the single 5V

1. Main rig - Icom IC 746
2. Portable rig - Icom IC 706MkIIIG
3. Receiver - IC R7000

Each rig is then selected from the YPlog control panel. It's that easy!

For readers with different makes of equipment the problems get more complex. The exception being Icom and Ten Tec who use the same converter interface (as illustrated). However, Yaesu requires split Rx/D (Receive Data) and Tx/D (Transmit Data) bus lines as shown. For Kenwood users, the converter is different yet again with four separate

control lines isolated from the transceiver by opto-couplers. (See ARRL Handbook, 1998, p22.47 for circuit details).

Once converter connections are made, almost full control of your rig(s) is possible on the one computer screen.

The On Air Computer

The computer inserts the date and time in the log and control signals from the transceiver are received via the communications port entering the mode, frequency and filter selection. All you have to do is enter the callsign of the station heard or worked and everything is displayed on the screen.

Most logging and control programs have a "Contest Mode" that automatically inserts the contest serial number, and increments the number on the next contact. Logs can be unique or merged with the main station log if desired. Clubs with several callsigns can have separate logs for each call. With YPlog, select File, Open Existing Log, then select the desired log from the menu and the display changes to the new log.

With a VHF packet modem connected to the computer as well as the logging program and a mouse, three communications ports are active at the same time. Arrange the key display windows so they can be seen on the screen, then "click" the wanted window and enter your data. Alternatively, use the ALT+TAB keys on the keyboard to see and display the new window. All this might seem as if you have become a "Trained Octopus" but once you have got accustomed to the process, then your productivity will soar to new heights, and no more scrap paper floating about!

Ham Tip No. 4

To prevent damage when handling processor chips, memory strips, hard and floppy drives, CD-ROMs, printed boards and cards etc, ALWAYS use an anti-static wrist strap (Altronics T4002) to an earthed computer chassis.

Ham Shack Computers, Part 5 - Upgrading looks at adding new hardware, upgrading and maintaining your computer on a shoestring budget.

- (1). MAX232 RS232 TX/RX 16pin DIL chip (DSE Z5369 \$10:54)
- (2). CI-V TTL/RS232 Level Converter. *The ARRL Handbook*. 1998. p22.46
- (3). *The Networking Handbook*. 1998. ACP Computer Publications Pty Ltd. Sydney. ISBN 1 875587 12 1 (inc. CD)

ar

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Fax +61 8 82924501 NEW FAX NUMBER Phone 0403368066 AH ONLY

All times are in UTC.

Mid Winter Slumber

Information on any activity is scarce this month! Hats off to those who keep the bands warm through winter. Rob VK3EK is one of those.... "I haven't reported for some time in regard to the 144.150 net of a Wednesday night @ 09:30 UTC. As I have some free time now, what better to do than to report on last night (30/5/2001)? Even if it is winter and the nights are getting cold, it was a good turn up."

"Worked from VK3EK QF32te at Bairnsdale; IAN VK3AXH QF12 Ballarat, JIM VK3II QF21 Coronet Bay, John VK3KWA QF22 Mitcham, Daryl VK3XD QF22 Newstead, Barry VK3BJM QF22, Roscoe VK3TPJ QF22, Jim VK3AEF QF03 Nhili. I believe Alan VK2DXE QF56 was listening but nothing heard here, and, as well Brian VK3KQB QF24 a regular of a Wednesday night's also."

"If you have an interest in VHF/UHF and Microwave, such as you can see by the report above, when we have good propagation we often have good contacts on 70cm, 23cm and 13cm as well. *Anyone is most welcome to join us.* There is also a 3.6500 liaison freq as well. So, come and be part of the fun! Anyone wishing to see what I get up to myself can have a look at my Web site, it is www.qsl.net/vk3ek/. Hope to speak to you all next week "... 73's Rob VK3EK

Joe Gelston, VK7JG, reports that 432 MHz Auroral propagation has occurred in VK in response to my column a few issues ago "... I wish to inform you that 432 has been used in VK for this mode. Back in 1989 14/03/89 to be precise there was an extremely large Aurora where I worked into VK5, 3 and 2 and to put the icing on the cake I worked David VK3AUU on 432 we exchanged 3-3 reports, I believe this to be the first Auroral contact on this frequency. Just for the record, this is my log. At 2220 worked VK30T 52 MHz also VK3HY on

6 and 2, 2235 worked VK2ZRE on 2, 2326 worked VK5NY on 6, 2333 worked VK3AUU on 432 MHz, also working VK5NY and VK3TAD on 2."

"Perhaps this info is a little dated but conditions on the night were excellent. I did work David once more on 432 via Aurora that year but nothing since. This year has been rather poor. I was running an 8874 to the legal limit into an 88el Jaybeam. At the present time have been experimenting with REX VK7MO using the Hell program we can communicate between Launceston and Hobart on 6m with as little as 500 milliwatts." ... 73's Joe Gelston VK7JG

50 MHz Activity From The Sub Continent

Emil Pocock, W3EP reports in his "World above 50 MHz column" in July 2001 QST magazine. "Indians received temporary permission to operate on 50.350 and 50.550 MHz this past fall using FM only, but SSB and CW were also allowed not long afterward. The initial special authorization lasted for six months, but in January, the permission was extended until August 1. Raj, VU2ZAP and other Indian operators have petitioned through their national organization for permanent access to a segment closer to 50.100 MHz. Other 6-metre operators active from Bangalore (MK82) this past season included VU2MKP, who runs an IC-746 to a 6-element Yagi; VU2RCR, with an FT-847 and a 4-element Yagi; and VU2BGS, who uses a transverter with 25 W and a long wire. VU2RM runs QRP to a small Yagi from Kakinada (NK16) on the east coast, and VU2GTE operates 6 metres from Bombay (MK69) on the west coast."

"Raj has had incredible success on the band with his FT-847 and a 4-element Yagi, as suggested by the 67 countries he worked in just six months. On many

days during the early part of this year, Raj worked HZ (Saudi Arabia), EY (Tajikistan), D6 (Comoros), VR2 (Hong Kong), JA (Japan), and other stations with huge S9+ signals. Raj worked Europeans as far west as Spain, New Zealand via long path, and across the Pacific to KH6/K6MIO in Hawaii. He has worked PY0FF, as well as other Brazilians and Argentines, but Raj has not yet heard any signals from South Africa or from North America."

"VU2ZAP also made some most unusual 6-metre contacts with CE0Y/W7XU on Easter Island between April 2 and 7. Bangalore is just north of the Equator, while Easter Island lies just south of the Equator, almost exactly half way around the globe. Thus, the two stations were nearly at their antipodes, approximately 18,300 km apart, and in ideal positions to take advantage of spring F2\ propagation. No matter which direction VU2ZAP and CE0Y/W7XU pointed their antennas, the great circle distance between the two varied by less than 3,500 km." ... Emil Pocock, W3EP

Serg Convention

The Queens birthday long weekend, 9-11th of June 2001, saw the annual pilgrimage to Mt Gambier, SA for the SERG convention. For over 30 years, now the SERG (South East radio Group) convention has been the traditional meeting point for VK3 & VK5 Amateurs of many and varied interests. Apart from the usual commercial equipment display and general "Buy & sell", the ARDF & Australian Fox Hunting Championships is perhaps the main event. Fox Hunting is conducted on 3.5, 28, 50, 144, 432 & 1296 MHz. Weather was good for most of the weekend and no one got bogged this year!

It is good to see the support for Fox



David VK5KK, David VK5CK and Mark VK5AVQ accepting the SERG trophy (2nd year running) in 1983!

will have your chances reduced by a factor determined by your dishes beam width vs. the arc of probable headings. E.g., if you are sure of the heading to within 15 degrees in the horizontal plane and your beam width is 3 degrees then your chances are one in five! If you don't have your frequency stability under control but your beam heading is then your chances are probably going to be in the same region. If you don't have either under control then you are in trouble! Moreover, given that the station at the other end has the same variables then

required, invariably the clip on crystal heater will achieve this along with a good oscillator design and a correctly specified crystal.

Murata manufacture a number of HC49/U clip on heaters. These are PTC (Positive temperature coefficient) devices that run at a temperature just above the highest expected in operation 50 degrees C is common on a 5volt supply rail. A crystal can be stabilised at 50 degrees within 5 minutes meaning a quick warm up compared to a crystal oven taking up to 30 minutes or more. Stability is within 1 degree C and implementation is simple. Just clip it on and connect to a five volt 250mA source! Some thermal insulation (styro foam) around the oscillator and crystal is advisable as temperature variation on the oscillator components can also be a secondary issue. You must use a 50-degree spec crystal. If you are ordering crystals from HyQ-Q ask for a crystal Spec TS07S, 5ppm 50 deg C cut. The end result, with some work, can be 0.3ppm over typical operating temperatures. (If any one needs clips, drop me an email).

The next most popular method is using a PLL locked local oscillator. The advantage of a PLL is the ability to lock the oscillator to a standard (usually 10 MHz) reference. This could be as simple as a 10 MHz TCXO / Oven based oscillator or a 10 MHz reference derived from a GPS or TV sync standard. This option will give you far better stability than the clip on heater in a homebrew overtone oscillator with random picked components, only limited by the extent you which to go with the reference!

There are two ways to implement a PLL. The first way is to use an ex commercial K band synthesizer such as the Qualcomm types. All usually, have 2.5 GHz fundamental oscillators compatible with most transverter multiplication chains. Modifications to get them to work from 2.1 – 2.6 GHz are not complex. The only pitfall of this type of oscillator is the relatively high amount of phase noise that they produce. Most are passable at 10 GHz but useless at 24 GHz! After all these are free running, relatively low Q oscillators at 2 GHz being locked by normal divider chains! The more modern types have reasonably sophisticated phase noise canceling features.

The second and preferred PLL type is

you will see why many microwave contacts do not to happen! "Dish" headings can be controlled with good maps, a graduated tripod and a good compass. Frequency accuracy and stability is a bit harder and in my opinion more important.

Knowing where you are in frequency relates to the stability, over time, of the local oscillator from the point it was first set. Frequency stability acceptable at 144 MHz of a few ppm's becomes unacceptable at frequencies a hundred times that. In much the same manner of beam headings, acceptable stability is a ratio of bandwidth vs. frequency. E.g., a 2.5kHz bandwidth at 144 MHz means that a variance of 17ppm will still mean that the signal is within the pass band of the receiver. At 10 GHz, that becomes 0.2ppm. When you consider that a good fifth overtone crystal is usually rated at 5ppm over its temperature operating range the potential for trouble is evident. Therefore, what has to be done and how much?

The most popular method of stabilizing an oscillator is to control the basic instability element, temperature. This can be done by controlling the temperature of the whole oscillator in a "Crystal oven" or by simply using a clip on "Crystal heater". What is needed will depend on the ultimate stability required. For our 10 GHz example, a 20 times improvement in stability is

Hunting as strong as it is. Its roots go back to earlier days in VHF & UHF activity. Once upon a time a good map, a compass, excellent local terrain local knowledge, good equipment, a suitable all terrain vehicle and good luck where all you needed (!) Nothing has changed! While GPS's and moving maps may make life a little easier for the navigator, it's still the same hard slog. Hats off to the SERG members, who under the callsign VK5SR successfully managed to hide themselves and keep a dozen or so participants on their toes for the weekend. This year it was a close battle between VK3 & VK5 with VK3 taking out line honours by a slim margin. Watch out next year!!

Microwave Primer Part Fourteen: Microwave Transverter Local Oscillators

Two fundamental variables can make or break a microwave contact over a significant path. The first is the correct dish horizontal/vertical "dish" heading. The second is frequency accuracy and stability. If both are under control then your good noise figure and measured power output will work as expected.

If you have your frequency accuracy/stability under control but perhaps not sure on the dish orientation then you

the injection locked overtone crystal. Commercially these are the "Frequency West Brick" type of oscillators where the overtone crystal oscillator is locked against a reference oscillator. The PLL has a relatively long loop time, after all the crystal has good short term stability only needing to be referenced against a standard for medium to long term stability. While these oscillators are common in the USA, they aren't here. As an alternative I have successfully developed an "add on" PCB that will convert a normal DB6NT (or G4DDK, etc) local oscillator to a PLL locked one. You retain the good phase noise characteristics of an overtone crystal but gain the ability to lock its frequency to any standard you can manage to find. Details are on my web site; so far, about 100 have gone out as short form kits around the globe.

The third option is to compensate the actual temperature characteristics of the local oscillator itself. This can be done by using various temperature compensating capacitors or via external means. Quite a few years ago, I conducted a few experiments with active temperature compensation. This was in response to the usual drift problems we experienced on 10 GHz signals ... lets call it the "One hand on the VFO dial at all times" syndrome! For those who like to study what an oscillator does under expected temperature variations and fix it

fundamentally then keep reading.

Active temperature compensation is quite simple. First, plot a crystal oscillator's frequency over an operating temperature range of say 5 - 40 degrees and chart this change. Then plot a straight line through the mean average of the curve. You will notice that the curve is almost a straight line over this range mostly due to changes within other parts of the oscillator. It is now just a matter of compensating for this change, i.e. repositioning the straight line flat! In its simplest form, it involves a small circuit using a varistor as the temperature source (clamped to the crystal) driving a low noise Op-Amp driving a Varicap diode loosely coupled to the crystal in a Butler (or similar) oscillator. A more complex solution is to use a look up chart/EPROM to compensate for temperature at set intervals.

While each oscillator will be different, it doesn't take long to plot various curves to chart the oscillators response to temperature, the varistors response to temperature and the oscillators response to Varicap volts. With some experimentation, you will find the correct voltage drive range for the Varicap to get almost linear results. You then can calculate the Op-Amps set point and gain for a first pass test! Usual improvement is 10:1 first time. You then simply repeat the exercise of plotting temperature vs. frequency. This time

around, you will now be compensating the Varicap temperature vs. voltage characteristics as much as anything. The result is a 20 - 50 times improvement ultimately dependent on the flatness of the original curve plotted.

In summary, I use all three types. For shack use, I use PLL techniques only because it enables all local oscillators to be locked to one source. In the field, I use both Oven clips and Temperature compensation. Oven clips have a small warm up time whereas temperature compensation works within 2 seconds. No matter which way you go always check or calibrate your local oscillator before you go out! Make sure that this reference lines up with the other stations reference! There is no use having a stable oscillator if you don't know where you or the other station is!

In closing

50 MHz has dropped off somewhat since early May 2001 from all reports. The Europeans report only a fair Spring Equinox, perhaps to be expected right at the alleged peak. The late warm conditions in the Southern States have helped give some local propagation but not much past 500km's. It is time to start building for next summer!

I'll leave you with this thought ... "Politicians and crabs move in such a manner that it is hard to tell if they are coming or going ..."

73s David VK5KK AR



RD contest spoiled by bad manners

I enjoyed reading Bernd's (DJ7YE) comments on contests in May AR and it captures my limited experience with contests. Soon after I obtained my callsign in 1977 I eagerly anticipated participation in the annual Remembrance Day contest. I became disillusioned very quickly. Bad manners were quite prevalent, particularly amongst those who were content on getting a good score rather than just participating.

I was inexperienced at contests so adopted normal operating practice of looking for a quiet spot, putting out several "CQ Contest" calls and then waiting for responses. The number of times I had "my spot" taken over by others was most annoying and it was primarily by an aggressive local few. If I searched around and heard somebody new I would call them, exchange pleasantries and move off leaving them to their spot. In the end I gave it all away

because there was no real communications taking place, only quick exchanges of numbers and a lot of discourteous operating practice. When the contest results were eventually published it brought a wry smile to my face to see those up around the winners circle. I knew how they got there and how they discouraged many others. I participated in two RD Contests and gave it away after that.

Ian Barton VK5AIB

more letters on page 56

Interesting Internet sites

People interested in telegraphy whether it is past, present or future can gain a wealth of knowledge from the Internet. Depending upon your interests, be them technical or historical, the information 'super highway' is the way to go.

If you are a complete beginner and looking for some sites to explore type in 'Telegraph Equipment' after a given time depending upon the search engine used you will be given a number of interesting sites to look at. It's just a matter of clicking on that site and taking it from there.

I did just that, some of the sites that came back were as follows - (note there are about 20 sites to choose from)

1. KA2MGE Telegraph Museum
2. Larry's Web Page
3. Telegraph and Scientific Instrument Museum

One site I found extremely interesting was 'KA2MGE Telegraph Museum' this one I will go into with a bit more detail about what can be found.

This site is for telegraph collectors and others interested in the history of telegraphy. All you have to do is click on a category and view its contents. The categories listed are as follows: -

1. Telegraph Apparatus
2. Telegraph Company Advertising Signs
3. Miscellaneous
4. Links to other sites

Silent Keys

The WIA regrets to announce the recent passing of:-

K C (Ken) SEDDON VK3ACS
(John) KELLY VK3AFD
A (Al) BOWLEY VK3AP
W A TRENWITH VK3ATW
C W RICHARDSON VK3QY

Let's have a look at these in detail.

1. Telegraph Apparatus

Within this category we focus on landline equipment basically hand keys from the years of 1860 through to about 1940.

We also look at Semi-Automatics, Radio Keys, Portable/Compact sets and Practice Keys. Each key is identified with a photograph and detailed information on that particular key.

2. Telegraph Company Advertising Signs

Here we'll look at signs that were used by the major companies of the time to advertise their services both inside and out of the telegraph office.

3. Miscellaneous

Here we look at Frank Cards, this was similar to credit cards of today, and these were issued by the telegraph companies to allow people to send telegrams on credit. Also covered are telegraph wire insulators, call boxes, membership cards, employee badges and telegrams.

4. Links

Many more telegraph pages can be found from links to other websites

- The Telegraph Office
- Telegraph Lore
- Vibroplex Collectors Page
- Sparks Telegraph key review
- IK6BAK Collection

Have a look at IK6BAK Website, he has over 70 different keys from around the world with information on each, this is a good place to start if you are trying to identify an unknown key, you may be lucky here.

The Telegraph Office - Web Address nmcewen@metronet.com

The best general Web page on the history and technology of telegraphy with numerous resources and links for collectors and historians. Neal McEwen K5RW maintains this site.

Internet On line Telegraph & Scientific Instrument Cyber-Museum

Tom Perera W1TP maintains this site full of images of telegraph equipment and scientific instruments. Web Address' are:-

- 1) <http://w1tp.com> or
- 2) <http://www.chss.montclair.edu/~pererat/telegrap.htm>

Other Sites Of Interest Are:-

- Morsum Magnificat. Journal for Morse Enthusiasts
Web Page: <http://www.morsum.demon.co.uk>
- The Keyletter. A compendium of fascinating information for and by collectors. Edited and published by Lynn Burlingame N7CFO
Web Page: <http://www.qsl.net/n7cfo/index.htm>
- Old timers Bulletin of the Antique Wireless Association
Web Page: <http://www.antiquewireless.org>
- Dots and Dashes. By the Morse Telegraph Site
Web Page: <http://www.webpak.net/~kl7ixx/index.html>

This is just a brief overview of some of the web sites that can be accessed if you have a computer or can get to a library.

Next month we will continue our tour of telegraph web sites.

Until then, 73 Stephen Smith VK2SPS

Oxley Region Amateur Radio Club

The O.R.A.R.C. held its annual Field Day at Port Macquarie over the Queens Birthday holiday weekend, (June 9/10). Attendance was down slightly on previous years, but with the winter weather of beautiful clear skies, it was a great weekend. Not only did visitors travel by road, but VK2EZQ/MM sailed up from Laurieton and anchored near the venue point.

Other than the conventional trash and treasure sales, demonstrations of SSTV, PSK-31, Packet and WinRadio were on show together with excellent stalls provided by Andrews Electronics and

MasterCom. A terrific display of antique equipment was also on show.

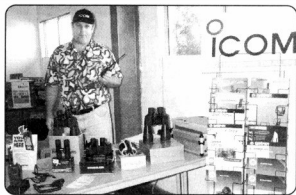
Five Foxhunts were conducted during the day on 2, 10 and 40 metres. The overall winner was Craig, VK2HBM, with Chris, VK2YMW, and a close second. The best presented vehicle was won by Arnold, VK2ADA. The homebrew competition, which had some very interesting equipment on view was won by Neil, VK2EI, with his own designed and constructed TV Frequency Reference Generator.

Besides Amateur equipment, the sausage sizzle was enjoyed beside the

water. The club had arranged some excellent raffle prizes donated by various business's in the area which were presented to the winners by WIA Federal Director David Pilley, VK2AYD. The O.R.A.R.C. which has approximately 50 members, meets at the S.E.S. Building in Gordon Street, Port Macquarie on the first Saturday of each month at 1 p.m. Visitors are always very welcome. For more information contact the Secretary, Alan Nutt, VK2GD, on (02) 6582 3557, or by email.



Trash or Treasure?



Gary Ryan of MasterCom with ICOM.

Adelaide Hills Amateur Radio Society

The May meeting of AHARS was devoted to the problem of interference. The speaker was Rob VK5RG who had to deal with this problem of interference though his work as well as from practical experience as a radio amateur – someone well qualified to explain the intricacies of unwanted noise.

The cause of power line interference and interference from computers were dealt with, in the most part. But the solution to the problems was often also presented.

With a number of OHPs and some material handed around, it was a very interesting and informative talk. An article based on this talk may appear in this magazine soon. It is a topic of vital interest to many.

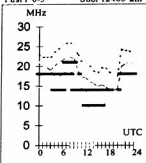
Visitors to VK5 are always welcome to attend the AHARS meetings but please note that there will be no meeting in July. A mid-year dinner is always held in lieu of a formal meeting, in July. If you are visiting the state at any time

please contact Alby VK5TAW or Geoff VK5TY, QTHR the callbook, for details.

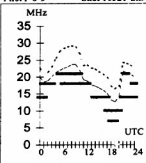
Please note that the HF BBS developed by AHARS is now in a new location, at the Water Tower, where it is using the callsign VK5WI. Otherwise everything is available to be used as before. If you are travelling around Australia it is now possible to access packet radio from wherever you can access VK5WI. The information about frequencies etc has all been published in AR.

Adelaide-Anchorage 30

First F 0-5 Shor 12466 km

**Brisbane-Berne ##**

First F 0-5 Shor 16321 km

**July 2001**

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Legend

- UD
- F-MUF
- E-MUF
- OWF
- ALF
- 10%-50%
- 50%-90%
- 90%-100%

Frequency scale

Time scale

**HF Predictions**

by Evan Jarman VK3AN

34 Alandale Court Blackburn Vic 3131

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.

These frequencies as identified in the legend are:-

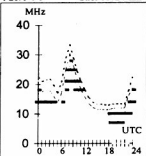
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path propagation mode and Australian terminal bearing are also given for each circuit.

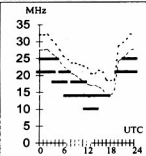
These predictions were made with the Ionospheric Predictor Service program: ASAPS Version 4

Adelaide-Dakar ##

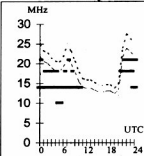
First F 0-5 Shor 16724 km

**Brisbane-Los Angeles 59**

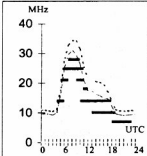
Second 4F3-8 4E0 Shor 11564 km

**Canberra-London ##**

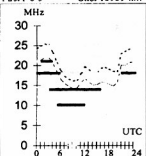
First F 0-5 Long 23042 km

**Darwin-Capetown ##**

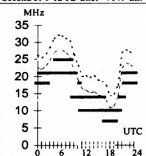
Second 4F3-5 4E0 Shor 11221 km

**Adelaide-Ottawa 58**

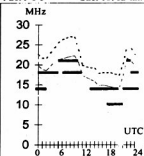
First F 0-5 Shor 16901 km

**Brisbane-Osaka ##**

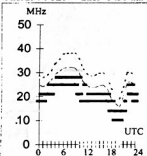
Second 3F9-12 3E1 Shor 7149 km

**Canberra-London ##**

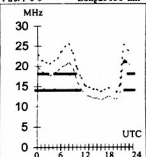
First F 0-5 Shor 16982 km

**Darwin-Tokyo 10**

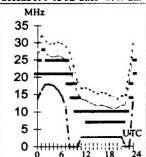
First 2F4-9 3E0 Shor 5436 km

**Adelaide-Stockholm ##**

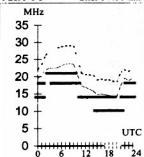
First F 0-5 Long 25030 km

**Brisbane-Singapore ##**

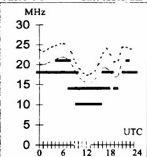
Second 3F9-12 3E1 Shor 6147 km

**Canberra-Moscow ##**

First F 0-5 Shor 14451 km

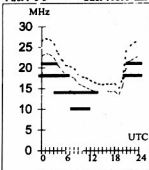
**Darwin-Vancouver 42**

First F 0-5 Shor 12212 km

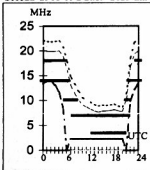


Hobart-Boston 78 **Melbourne-Auckland** 97 **Perth-Honolulu** 70 **Sydney-Miami** 86

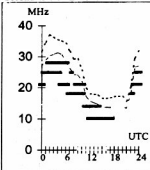
First F 0-5 Shor 16895 km



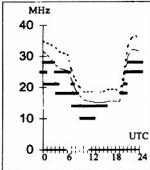
Second 2F18-19 2 Shor 2623 km



Second 4F4-8 4E0 Shor 10905 km

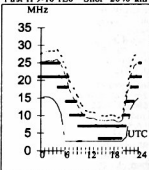


First F 0-5 Shor 15026 km



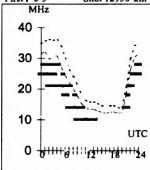
Hobart-Christchurch ##

First 1F9-10 1E0 Shor 2040 km



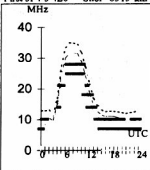
Melbourne-Lima ##

First F 0-5 Shor 12950 km



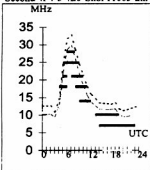
Perth-Johannesburg ##

First 3F4-5 4E0 Shor 8315 km



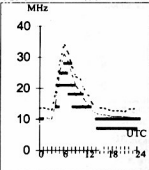
Sydney-Pretoria ##

Second 4F4-5 4E0 Shor 11063 km



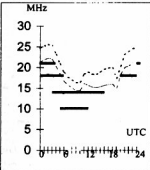
Hobart-Lusaka ##

First F 0-5 Shor 11045 km



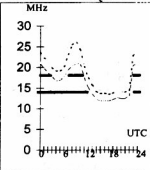
Melbourne-Montreal 62

First F 0-5 Shor 16731 km



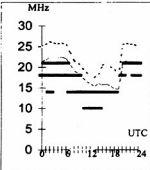
Perth-London ##

First F 0-5 Long 25543 km



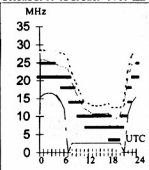
Sydney-Seattle 47

First F 0-5 Shor 12470 km



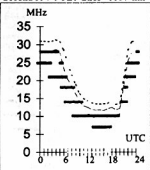
Hobart-Port Moresby ##

Second 2F10-12 2I Shor 3710 km



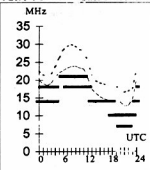
Melbourne-Papeete 90

Second 3F7-9 3E0 Shor 6687 km



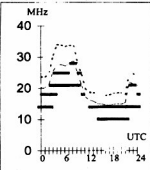
Perth-London ##

First F 0-5 Shor 14481 km



Sydney-Tel Aviv ##

First F 0-5 Shor 14173 km



HAMADS

- Hamads may be submitted by email or on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or in block letters, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Email: newsletters@ozemail.com.au Fax: 03 9756 7031
 Postal: Newsletters Unlimited, PO Box 431, Monbulk Vic 3793

Please send your Hamad by ONE method only (email preferred)

FOR SALE ACT

- DRAKE TR3 Transceiver, remote VFO, AC and DC Power, some spare valves, manual, microphone \$400. VK1US QTHR, phone 02 6281 3587.

WANTED ACT

- TOWER, NALLY TYPE, wind up and tilt-over, for ACT Division ham shack. Gilbert VK1GH, phone 02 6254 3266 or 0427 543 003

FOR SALE NSW

- PACKRAT 232MBX packet control. Serial No M00667. Complete with cables, handbook, software. Excellent condition, used twice. Cost \$649. Sell posted insured C O D \$260. Charlie VK2NAJ QTHR, phone 02 6456 1646. Jindabyne NSW
- KENWOOD TS-50S, very good condition SN 60800838 \$950. KENWOOD TS-680S, good condition SN 9031265 \$600. KENWOOD SP-430 SN 090218 \$60. ICOM IC28H1, very good condition SN 16035 \$225. Bruce Morley VK2ZNB, phone 0418 684 701. PO Box 3029, Teralba NSW 2284

- COMMAND [SCR-274N] receivers, transmitters and modulators, on racks, with connectors, remote controls and tuning cables. Bill VK3AQB, phone 03 9337 4902 or jikajika@net2000.com.au

WANTED NSW

- Circuit diagram for TEKTRONIX 5403 OSCILLOSCOPE main frame. VK2EDD, phone 02 4982 9847
- VALVES. I'm trying to contact the seller at the Wyong Field Day, who had boxes of CV valves for sale. He had a stall near the entrance to the undercover seller area. I need some more! WHIP AERIALS. I also want to contact another seller who had some green whip aerials in boxes. He was also at the Wyong Field Day and was located up the hill near the main entrance in a large van. Ray Robinson VK2ILV, phone 02 9489 8561

- CIRCUIT diagram/technical manual for a LEADER LBO 505 DUAL TRACE OSCILLOSCOPE. Stan Dogger VK2KSD, QTHR, phone 02 6677 9292.

- The radio base of the Variety Club of WA is looking for somewhere to stay overnight between 10-18 Aug. Must be RF quiet. Must be in GSM service. Will be travelling fully self contained along the Barrier Hwy, Mitchell Hwy, Newell Hwy, Gwydir Hwy to Byron Bay. Will be operating 5 MHz mobile. Please contact Peter VK6PK on phone 08 9573 1316 or email beta@vianet.net.au mni tnx.

FOR SALE VIC

- COMMAND[SCR-274N] receivers, transmitters and modulators, on racks, with connectors, remote controls and tuning cables. Bill VK3AQB, phone 03 9337 4902 or jikajika@net2000.com.au
- YAESU Transceiver FT-102, synthesised scanning EXTERNAL VFO FV-102DM, ANTENNA TUNER FC-102, EXTERNAL SPEAKER AUDIO/FILTER SP-102, EXTERNAL SPEAKER/PHONE PATCH SP-102P, MICROPHONE MD-1, MICROPHONE MH-1, GSRV antenna, DUMMY LOAD model MFJ-250. Prefer not to separate Yaesu marked equipment. All manuals. Harrow VK3CHM QTHR, phone 03 9890 5960.

- ICOM IC-T81A hand held, current model, 4 band, 6.2-70-23. Has DESKTOP CHARGER model BC119, CASE, SPEAKER MICROPHONE, SPARE BATTERY, QUAD BAND GAIN ANTENNA. In mint condition, hardly used. You can pay \$1375.00 or you can buy mine for \$800.00 S/No of Radio is 01029. VK3GV QTHR or phone 03 9560 3773 or valentine@unite.com.au, Glen Waverley.
- KENWOOD TS-850S, built-in tuner, mint cond. \$1800. YAESU FT-100Z LINEAR AMPLIFIER, mint cond \$1000. YAESU FC-902 ATU mint cond. \$450. KENWOOD TW-4100A DUAL-BAND 144/430 MHz Ex. Cond. \$350. ICOM IC-27A 144MHz XCVR \$250. All with

manuals in boxes. David VK3NDS, phone 0419 357 104.

- CUSHCRAFT R7000 VERTICAL ANTENNA \$500. KENWOOD TS-520S TRANSCEIVER, \$160, AT-200 ANTENNA TUNER \$160, VFO-520 REMOTE VFO \$160, MC-60 DESKTOP MICROPHONE, \$90. MIZUHO SX-9 PRE-SELECTOR 3-30MHz \$120, HUSTLER Commander 400 ROTATOR \$150. Contact David: Mobile 0438 404 515. Email cookdavo@hotmail.com

- YAESU FT-890 in mint condition, bought brand new, one owner only, fitted with ATU. This is a very clean beautiful radio, original box, cables, handmike and manual, \$1500. KENWOOD TS-820 in fine working condition with MC-50 base mike, only ever used it on 160m. \$375. YAESU FT-101E in good working condition, I only ever used it as an I.F. for the FTV-250B, R.F. Processor not fitted, a clean, no marks, work horse \$300. ALINCO DUALBANDER DR-570, working ok on VHF/UHF. Display is clean and clear, 10 channel memory, bought brand new 10 years ago and has never failed me. \$350. Phone AH 03 9792 4500, B.H. 03 9212 4070 or email cjeffrey@ozemail.com.au. Clint Jeffrey VK3CSJ, QTHR.

- Shack Sale & Workshop Clearance: 1 X ICOM IC-271H 2m high power all mode BASE STATION \$900. 1 X ICOM IC-471H 70cm high power all mode BASE STATION \$1000. 19 X MOTOROLA MAXAR 80 VHF MOBILES \$30 each. 2 X Commercial UHF REPEATERS PHILIPS PRF-15 (430 - 500 MHz) \$1600/pair. 1 X Commercial VHF REPEATER - needs minor repairs \$250. 1 X TEKTRONIX WFM-1480 VIDEO WAVEFORM MONITOR - VGC \$400. 1 X TEKTRONIX 465 OSCILLOSCOPE VGC \$800. 1 X BOSCH KO COMPOSITE VIDEO DECODER to RGB/YUV \$500. 3 X COMPAQ DESKPRO-4100 486dx4/100 PCs with 16MB RAM \$100 each. (No keyboards, mice or monitors). 2 X DATAPRODUCTS LZR-895 LASER PRINTERS \$200 each. 1 X APC Smart-ups 400 POWER SUPPLY - \$150. 1 X TIMEWAVE DSP-59+ AUDIO DIGITAL SIGNAL PROCESSOR \$300. All offers considered! Paul VK3KZH (Ex VK3VRD / VK3YVD) QTHR, phone 0412 302 939

- LINEAR AMPLIFIER, the Rolls-Royce of liners BUILT BY VK3AHT, built with highest quality professional and commercial components, guaranteed better than Drake or Collins liners, using 3-500Z valves. Front panel controls input and output meters plus spare 3-500Z, r r p \$US340. The lot \$1400. Harry VK3AJX QTHR, phone 03 9802 5704

- ICOM IC-281H MOBILE 2m TRANSCEIVER SN 001702 with manual (& home brew Slim Jim antenna) \$345. MOBILE ANTENNA MFJ 1728B 2m 5/8 wave, magnetic base \$25. DIAMOND F-23A ANTENNA - 2m 5/8 wave 3 element vertical \$95. Plus misc info. David VK3DNG QTHR, phone 03 9859 4698. Email darodda@jeack.com.au

- NALLY TOWER, 2 stage, dismantled \$800 ono, for inspection ring Mark Dunn, phone 0418 315 747

- KENWOOD TL-922 LINEAR, new unused, \$1600. KENWOOD TS-940S, exc condition \$1300. KENWOOD TS-440S, v good \$750. KENWOOD PS-50 mint \$300. Ron VK3OM QTHR, phone 03 5944 3019

FOR SALE QLD

- KENWOOD TRANSCEIVER TS-440S Serial No.8060024 with Manual \$400. KENWOOD DC

Power Supply PS-50 Serial No. 8080466 with Manual \$250. KENWOOD 144 MHz TRANSCEIVER TH-25 Serial No.9042210 with Manual \$200. PHILIPS TRANSCEIVER FM-828 Serial No.41899 \$120. VK POWERMASTER DC POWER SUPPLY \$50. W.G.WULF Multi-band (10-80 m) VERTICAL ANTENNA with assembly diagram and instructions \$90. Errol Mattingley VK4MEH, phone 07 4973 8514.

• YAESU FT-1000MP HF TRANSCEIVER in excellent condition \$4200. YAESU FL-7000 HF LINEAR AMPLIFIER VGC serviced by Dick Smith Electronics to manufacturer's specification \$2400. Manuals included with both units. Contact Harry VK4EL on phone 07 5445 2647 or heverett@one.net.au

• SHURE 404C HAND MICROPHONE. Same insert as 444 Shure desk mike (brand new in box) \$100.00. YAESU MUSEN LANDLINE PHONE PATCH SPEAKER with full instructions \$225.00. KENWOOD MC-50 DESK MICROPHONE (as new) \$75.00. KENWOOD PS-52 HEAVY DUTY POWER SUPPLY, brand new in box \$575.00. KENWOOD PG-2N DC POWER CABLE \$35.00. (New) KENWOOD PG-3B NOISE FILTER DC POWER LEAD \$35. (New) KENWOOD DM-81 GRID DIP METER complete \$125.00. ICOM MH-98 DTMF SCANNING HAND HELD MICROPHONE, new in box \$75.00. John Abbott VK4SKY QTHR, phone 0417 410 503. Email japat5@bigpond.com

• ICOM IC-71F 70cm ALLMODE and IC-16 SATELLITE I-7H \$900. KENWOOD SM-220 STATION MONITOR (inc BS8) \$220. TOPWARD TAG-403 AUDIO GENERATOR. \$80. MICRONA

& REACE SWR, HF PWR meters \$25 ea, and G.M.E. GX284 6ch MARINE CB & new antenna \$50. all ono, Dennis VK4ADY QTHR, phone 07 4639 2369. Email dennisa@hypermax.net.au

• YAESU FT-101 HF Tx/Rx \$150. YAESU FT-757GX HF Tx/Rx \$500. PALOMAR HF AMPLIFIER 300W 13.8V \$150. YAGI 3-element tri-band, balun, coax \$125. peterhadgraft@yahoo.com VK4APD, phone 07 3397 3751.

WANTED QLD

• Service/owner manual (or copy) for H P SIGNAL GENERATOR (VHF) model 608E. All costs refunded. FILAMENT TRANSFORMERS 5v @ 15/30a and 10v @ 10a. Gwen VK4CB QTHR, phone 07 3202 7137

• POWER PLUG for YAESU FT-101, could be just the (Jones) plug, DC power cable or AC power cable. Michael VK4BMV QTHR, phone 07 3260 5776 or e-mail fmrtch@msn.com.au.

FOR SALE SA

• Deceased Estate: KENWOOD TS-180S with operators manual \$500. TH3 3 ELEMENT BEAM \$150. COMMANDER ROTATOR with control box, power supply and spare rotor \$100 (needs attention). Paul VK5MAP QTHR, phone 08 8651 2398

WANTED SA

• BATTERY CHARGER for MOTOROLA HT-220 handheld. Hank VK5JAZ, phone 0403 285 940 or vk5jaz@hotmail.com

FOR SALE WA

• KENWOOD TS-790A DUALBANDER S/N 50400212 (2m/70cm) pristine condition, in original packaging with operating and service manuals and MC-60 desk mic \$1500. Don VK6DJP, phone 08 9458 3449

MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 9728 5350

FOR SALE ELECTRONIC VALVES

If you are looking for valves you can contact, Gamin Liyadipitya at email: gaminli@ee.unsw.edu.au Small negotiated fee — first come first served.

• AMIDON FERROMAGNETIC CORES:

For all RF applications. Send business size SASE for data/price to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please. 14 Boanyo Ave Kiama). www.cyberelectric.net.au/~rjandusimports.

Agencies at: Active Electronics Tas, Truscotts Electronic World, Melbourne and Mildura: Tower Communications, Perth: Haven Electronics, Nowra

New email address for hamads:

newsletters@ozemail.com.au

If you have sent a hamad to the old email address since 22/6/01, please resend. We apologise for the inconvenience (our ISP went broke!)

PLAN AHEAD

ACTIVITIES FOR JULY

- Remembrance Day Contest preparation.

Note letter this issue on manners. The RD has always been the Friendly Contest let us keep it that way as a mark of respect to those Amateurs who died in war.

ACTIVITIES FOR OCTOBER

- Plan now to help some Scouts or Guides in JOTA or JOTI and spread the word that Hams are fun, Amateur Radio is interesting and it helps people.

ACTIVITIES IN AUGUST

- Take part in the Remembrance Day Contest and met a few or more old friends.
- Take part in the ALARA Contest and meet a few new girls. Every one can take part. It now runs for 36 hours covering two evenings.

<http://www.hamsearch.com>
a not-for-profit site that is a search engine for hams

"Hey, Old
Timer..."



If you have been
licensed for more than
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- Note 1** Views expressed in letters are those of the authors and do not necessarily represent the policy of the WIA.
Note 2 Some of the letters may be shortened to allow more letters to be published.

Compulsory Membership

On the subject of membership, I feel it should be mandatory.

In my opinion compulsory membership would ruin the WIA. It may give it some increased resources, but the effectiveness that these are used would fall, so we would be no better off than we are now. Our standing with government will fall. It would make WIA office bearers completely unaccountable. All amateurs in Australia would be forced to pay for an entrenched bureaucracy that could make a crony-stacked club look like an open democracy! There is also no realistic possibility of a government ever legislating for compulsory membership.

To quote from my WIA opinions page <http://www.alphalink.com.au/~parkerp/wisnat.htm>

"Compulsory membership and the 'freeloader problem'"

When loyal WIA members see that they are paying for services and facilities that non-members can use for free, they quite justifiably get upset. Why should non-members get many of the benefits members pay for (e.g. repeaters, spectrum space obtained through WIA and IARU lobbying) and contribute nothing in return?

These concerns are quite legitimate. Some well-meaning people have suggested that Institute membership be made a condition of holding an amateur radio licence, an/or become a component of the annual licence fee. At first sight this appears quite attractive. Because the costs of national representation, Amateur Radio magazine and administration would be spread over 16 000 amateurs instead of

less than 5000, per-capita membership subscriptions could fall. Greater membership gives the Institute more clout in the corridors of power and allows improved services to members.

All these are laudable aims. However I am forced to conclude that any requirement for Australian radio amateurs be WIA members would be contrary to the Institute's best interests. I hold this view for the following reasons.

- The legitimacy of the WIA as the representative organisation for Australian radio amateurs would disappear overnight if it were widely known that membership was compulsory. This would demean the WIA in the eyes of both its members and the ACA.
- The WIA would become lazy. It would no longer be required to work to retain members by providing services members want. Thus though there would be more money available, there would be less discipline to spend it efficiently.
- Thus members would get less value for their membership dollar.
- The WIA is currently a democratic organisation. Members can come and go as they choose and seek election for office. Compulsory membership would transfer power from individual members to WIA office-bearers and employees. There would be fewer checks and balances to curb the damage that could be caused by incompetent (but well-meaning) office-bearers.
- Membership loss is a symptom, not a cause. It is the causes that should be treated, not the symptom. Compulsion solves nothing.
- If membership were made compulsory, the WIA would become very unpopular because Australians value freedom of association and resent forced unionism.

- Any decision by a future government to rescind compulsory WIA membership for Australian amateurs would plunge the Institute into crisis because the organisation would have lost the skills to attract and retain members (who belong due to choice rather than compulsion). People who advocate compulsory WIA membership for all Australian amateurs mean well, but should never be allowed to get their way. Fortunately, even if this misguided idea becomes WIA policy (which is unlikely), there is absolutely no prospect of any Australian Government acceding to it. And this will be for the good of all of us.

Supporters of compulsory WIA membership should cease their misguided bleating and instead work to make the WIA such an attractive organisation that nearly all Australian amateurs will want to join. Compulsion fixes nothing!

73, Peter Parker VK3YE

Invisible Antennas

I wish to compliment both you and Ron Holmes, VK5VH, on the article on 'Invisible Antennas' published in AR, April 2000.

The article was well written from both technical and English points of view. With the greying of our ranks, an article like this can bring new hope to those of us displaced by age or economic rationalism from our normal hobby pursuit.

It is quite clear from Ron's article that one doesn't need the latest whizz-bang radio and an antenna farm to remain in contact with lifelong friends. I also got a feeling of joy as I read the article - Ron knows how to write a motivating article. I hope he has more in the pipeline.

73 de Brian Clarke VK2GCE

Address Letters to:

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